United States
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Natural
Resources
Conservation
Service

In cooperation with Illinois
Agricultural Experiment
Station

Soil Survey of McDonough County, Illinois

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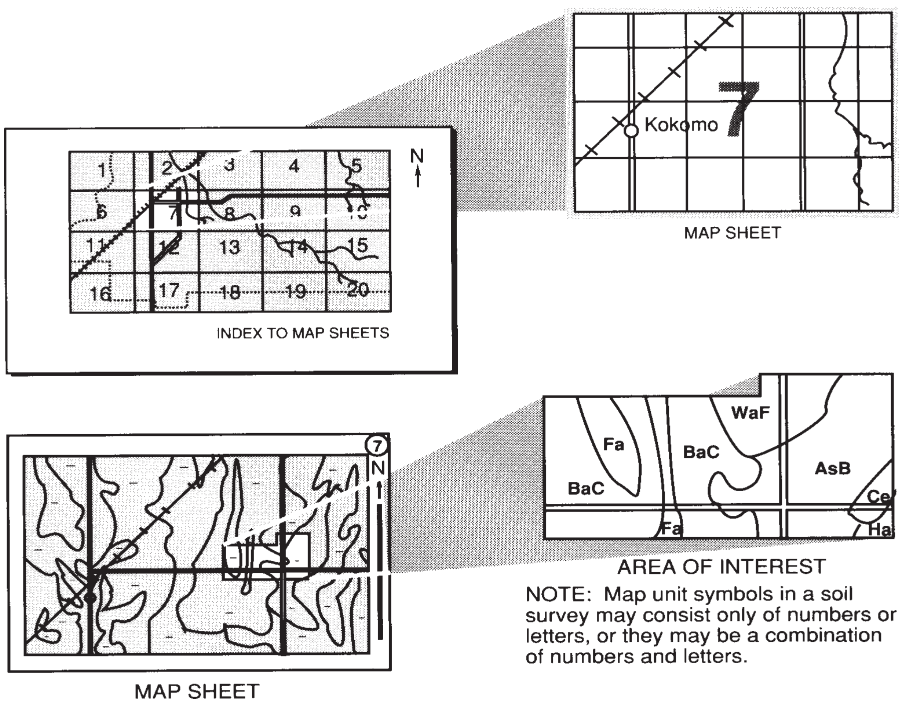
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Numerical Index to Map Units**, which lists the map units by symbol and name and shows the page where each map unit is described. The map unit symbols and names also appear as bookmarks, which link directly to the appropriate page in the publication.

The **Contents** shows which table has data on a specific land use for each soil map unit. Also see the **Contents** for other sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2001. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the McDonough County Soil and Water Conservation District. Financial assistance was provided by the McDonough County Board and the Illinois Department of Agriculture.

Cover: Hay being harvested from an area of Greenbush silt loam, 2 to 5 percent slopes, on part of the Western Illinois University farm and agricultural experiment station. (Photo courtesy of Duane Mansir and Tim Howe)

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Issued 2005

Numerical Index to Map Units

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
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Soil Survey of McDonough County, Illinois

By Dave Preloger, Natural Resources Conservation Service

Original fieldwork by L.L. Merkel, L.R. Staley, M.J. Walczynski, and M.B. Walker, Natural Resources Conservation Service, and C.L. Balek, R.J. Bednarek, J.S. Eversoll, and K.D. Smail, McDonough County

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Department of Agriculture

McDonough County is in west-central Illinois (fig. 1). It has an area of 377,750 acres, or about 590 square miles. In 2000, the county had a population of 32,913. Macomb, the county seat, had a population of 18,558. McDonough County is bounded by Henderson and Warren Counties on the north, Fulton County on the east, Hancock County on the west, and Schuyler County on the south.

This survey updates an earlier survey of McDonough County published in 1997 (Walker, 1997). It includes soil information on digital ortho quarterquad sheets for use in geographic information systems.

General Nature of the Survey Area

This section provides some general information about McDonough County. It describes farming; relief, physiography, and drainage; and climate.

Farming

Farming has been a major enterprise in McDonough County since the area was settled. In 1997, there were 824 operating farms in the county (Illinois Agricultural Statistics Survey, 2002). The average farm size is about 413 acres. Much of the grain produced on the farms is fed to livestock. Corn, soybeans, and hay are the main crops. In 2001, about 136,900 acres was used for corn, 125,200 acres for soybeans, and 8,500 acres for hay. Hogs and cattle are the main livestock. In 2001, the total number of swine was 26,700 and the total number of cattle was 18,200.

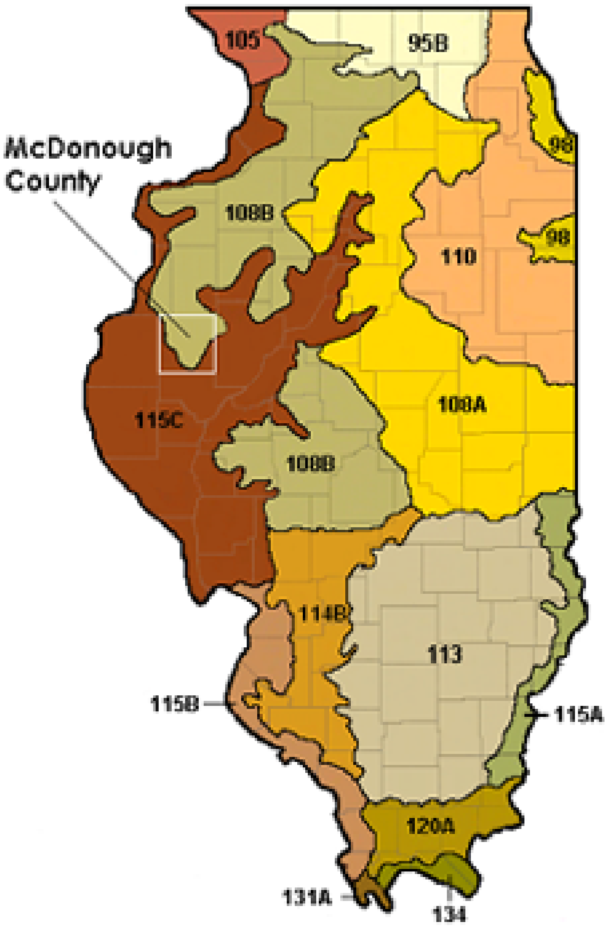
Relief, Physiography, and Drainage

Prepared by Cynthia L. Balek, county soil scientist, and Dr. Richard L. Rieck, geography department, Western Illinois University

McDonough County is in the Galesburg Plain of the Central Lowland physiographic province (Leighton and others, 1948). The Galesburg Plain is part of the relatively flat, loess-covered Illinoian glacial till plain. Although many landforms in the county are the direct result of glaciation, the present relief is largely a result of fluvial erosion.

Dissection is greatest in the west and southwest. Because the drift is generally less than 50 feet thick in this area (Piskin and Bergstrom, 1975), many of the streams have cut down through the glacial sediments to the underlying Mississippian and Pennsylvanian bedrock. Valleys with exposed bedrock are generally narrower and steeper than valleys cut entirely in drift, and they create an irregular pattern of topography in the southwestern part of the county.

Mississippian rock, primarily limestone, forms the



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain

98—Southern Michigan and Northern Indiana Drift Plain

105—Northern Mississippi Valley Loess Hills

108A and 108B—Illinois and Iowa Deep Loess and Drift

110—Northern Illinois and Indiana Heavy Till Plain

113—Central Claypan Area

114B—Southern Illinois and Indiana Thin Loess and Till Plain

115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes

120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys

131A—Southern Mississippi Valley Alluvium

134—Southern Mississippi Valley Silty Uplands

Figure 1.—Location of McDonough County and major land resource areas (MLRAs) in Illinois.

bedrock surface in large, buried bedrock valleys where preglacial streams removed overlying Pennsylvanian rocks (Horberg, 1950). The Mississippian rock is locally exposed along the La Moine River where Quaternary erosion exhumed the walls of a buried bedrock valley. Pennsylvanian strata consisting of sandstone, limestone, shale, and coal make up most of the bedrock surface. Some of these younger units, such as the Colchester (No. 2) Coal and various clays and shales, have been extensively mined.

The highest elevations in the county are situated on the crests of linear hills in the northwest and average about 800 feet above sea level (fig. 2). A minimum elevation of about 470 feet above sea level occurs along the La Moine Valley where the river leaves the county in the southwest (Hinds, 1917).

In the north and east, where much of the upland surface is undissected, glacial landforms are more apparent. Numerous subdued linear swells, thought to be glacially streamlined (Wickham, 1979), stand above the otherwise low-relief glacial till plain surface. Along the East Fork La Moine River are remnants of Pleistocene terraces that formed in association with Illinoian and Wisconsinan glaciation (Eldridge, unpublished thesis). Near the county's eastern border, the middle Illinoian Table Grove Moraine is a discontinuous north-south-trending ridge that separates Spoon River drainage from the La Moine (Willman and Frye, 1970).

McDonough County is entirely within the Illinois River watershed. In about 90 percent of the county, water drains to the southwest into the La Moine River. The water in the rest of the county drains eastward via the Spoon River (Dawes and Terstriep, 1966). An unusual, distinct rectangular drainage pattern, possibly related to glaciation (Caspall, unpublished thesis) or bedrock joints (Croswell, unpublished thesis), exists throughout most of the county. Troublesome Creek, the East Fork La Moine River, and Camp Creek are examples of linear streams exhibiting right-angle course changes characteristic of rectangular drainage. In the northeast, Drowning Fork and Farmers Fork

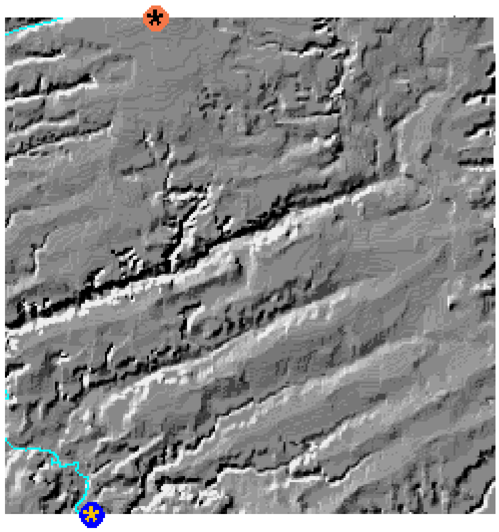


Figure 2.—A shaded relief map of McDonough County.

display dendritic patterns that are more characteristic of drainage on a glacial till plain.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at La Harpe during the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 26.2 degrees F and the average daily minimum temperature is 16.6 degrees. The lowest temperature on record, which occurred at La Harpe on February 13, 1905, is -30 degrees. In summer, the average temperature is 73.1 degrees and the average daily maximum temperature is 85.1 degrees. The highest recorded temperature, which occurred at La Harpe on August 9, 1934, is 113 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree-days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

Average annual precipitation is 39.02 inches. Of this total, about 24.84 inches, or about 64 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 12.84 inches. The heaviest 1-day rainfall on record is 10.25 inches on June 10, 1905. Thunderstorms occur on about 50 days each year.

The average seasonal snowfall is 24.6 inches. The greatest recorded snow depth at any one time is 22 inches on January 15 and 16, 1979. On average, 42 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

Tornadoes and severe thunderstorms strike occasionally. They are of local extent and of short duration and cause only sparse damage in narrow belts. Hailstorms sometimes occur during the warmer periods. The hail falls in scattered small areas.

How This Survey Was Made

This survey was made to provide updated information about the soils and miscellaneous areas in McDonough County, which is a subset of Major Land Resource Areas 108B and 115C (fig. 1). Major land resource areas (MLRAs) are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA, 1981). Map unit design and the soil descriptions are based on the occurrence of each soil throughout the MLRA. In some cases a soil may be referred to that was not mapped in the McDonough County subset but that is representative of the MLRA.

The information includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the

landscape, soil scientists develop a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Interpretations are modified as necessary to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a seasonal high water table within certain depths in most years, but they cannot predict that the water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area may not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Factors of Soil Formation

Soil-forming processes act on deposited or accumulated geologic material. The characteristics of the soil at any given point are determined by the parent material, living organisms on and in the soil, the climate, the topography, and the length of time that the forces of soil formation have acted on the soil material (Jenny, 1941).

Climate and living organisms are active factors of soil formation. As they act on the parent material that has accumulated through the weathering of rocks and that may have been relocated by water, glaciers, or wind, they slowly change the material into a natural body that has genetically related horizons. The effects of climate and living organisms are conditioned by topography. The parent material affects the kind of soil profile that forms. Finally, time is needed for changing the parent material into a soil. Usually, a long time is needed for the formation of distinct horizons. The importance of each factor differs from place to place, and each modifies the effects of the other four. In some areas one factor dominates the formation of a soil. Human activities, such as clearing forests, cultivating, and applying fertilizer, also influence soil formation.

Parent Material

Prepared by Cynthia L. Balek, county soil scientist, with assistance from Dr. John J. Alford, geography department, Western Illinois University

Parent material is the consolidated or unconsolidated sediment in which a soil forms. Most of the soils in McDonough County formed in glacially derived unconsolidated sediments. Loess and till are the most geographically extensive Pleistocene deposits. Although other glacial sediments, such as outwash, lacustrine silts and clays, and organic silts, occur in the county, they are typically deeply buried beneath the loess and till.

Recent alluvium also is a common parent material in the survey area. Its distribution is generally restricted to narrow flood plains bordering major stream valleys. Even though alluvium is not directly related to glaciation, its composition is determined in part by the different glacial sediments that are eroded by the stream.

Prior to glaciation, the soils in the survey area formed in Mississippian and Pennsylvanian limestone, sandstone, shale, and coal. Today, the remaining extent of the soils that formed in weathered bedrock is minor. Shale bedrock is a common parent material in the western part of the county where the glacial sediment has been eroded. Marseilles soils formed mainly in weathered shale.

Sometime between 302,000 and 610,000 years ago, a pre-Illinoian glacier from the northwest crossed the Mississippi River and entered the survey area (Richmond and Fullerton, 1986). Local drainage at this time was to the southwest and was controlled by the Carthage Bedrock Valley, the largest tributary to what is now the Mississippi River (Horberg, 1950). Because drainage was to the southwest, toward the ice margin, the glacier acted as a dam, causing the stream in the Carthage Bedrock Valley to pond (Balek, unpublished thesis). The resultant lake may have extended from La Moine Township in the southwest to the town of Bushnell in the northeast. Lacustrine silts and clays associated with this ancient lake are currently being exhumed along parts of Troublesome and Killjordan Creeks.

Outwash and till overlie the lacustrine sediments. These materials were deposited by the glacier that dammed the drainage as it continued to advance to the Illinois River. On some of the steeper slopes bordering Troublesome Creek, patches of outwash lie close enough to the surface to serve as parent material for soil formation.

A long period of erosion and soil formation, known as the Yarmouthian Interglacial, followed deglaciation of the pre-Illinoian ice. The Yarmouth Soil has been identified in McDonough County from deep core samples; it is not known to be exposed at the surface. The Yarmouth Soil is buried beneath till and outwash associated with the succeeding Illinoian glaciation.

About 302,000 years ago, an Illinoian glacier entered the survey area from the northeast (Johnson, 1986). A large volume of outwash was deposited in the bedrock valleys; numerous sand pits along Spring Creek reveal thick sequences of glaciofluvial deposits. Till was then deposited over the outwash as the ice overrode the county.

On parts of the bedrock upland, the glacier molded the underlying surface. This action produced the linear hills in the county. The trend of these streamlined features indicates the direction of local ice movement. The Table Grove Moraine, just inside the county's eastern border, was also formed sometime during the Illinoian glaciation.

A long ice-free interval of weathering, called the Sangamonian Interglacial, followed the Illinoian glaciation. A well developed, clay-enriched Sangamon Soil formed in the Illinoian till and in other less extensive surface deposits. Although the Sangamon Soil is one of the most prominent and widespread units in the county, it is largely buried beneath Wisconsinan Peoria Loess.

Peoria Loess is the most geographically extensive parent material in the survey area. This loess, which was deposited locally less than 25,000 years ago (McKay, 1979), is windblown silt that originated on the flood plain along the Mississippi River (Glass and others, 1968). Streams draining late Wisconsinan glaciers filled the Mississippi valley with sediments. After the flood plain dried out, the silts were picked up by the wind and deposited on the uplands. Approximately 6 to 10 feet of Peoria Loess accumulated on the undissected uplands. The somewhat poorly drained Ipava and Keomah soils formed in more than 60 inches of loess.

On hillslopes bordering stream valleys, erosion during loess deposition resulted in a thinner loess cover. The moderately well drained Assumption soils formed in less than 40 inches of loess and in the underlying Sangamon Soil, which formed in till. Where the slopes are extremely steep, the Sangamon Soil has been eroded and the Modern Soil has formed in a thin layer of loess and in the underlying till. Hickory soils formed in this material.

Along the larger stream valleys, the soils formed in Cahokia Alluvium, an alluvial sediment dating from Wisconsinan to Recent times. Because most of the alluvium in McDonough County was derived from the erosion of loess-covered uplands, many of the soils on flood plains formed in silt loam material. Along parts of Spring Creek and Troublesome Creek, however, buried bedrock valleys that have been filled with outwash are being exhumed. This process has resulted in an alluvial parent material that contains more sand-sized particles than is normal.

Living Organisms

Plants are the principal living organisms affecting the soils in McDonough County. Bacteria, fungi, and earthworms, however, also have affected soil formation. The chief contribution of plant and animal life is the addition of organic matter and nitrogen to the soil. The kind of organic material on and in the soil depends on the kind of plants that grew on the soil. The remains of these plants accumulate in the surface layer, decay, and eventually become organic matter. The roots of the plants provide channels for the downward movement of water through the soil and add organic matter as they decay. Bacteria in the soil help to break down the organic material and thus help to provide plant nutrients.

The native vegetation in the county was trees and prairie grasses. The sloping soils formed mainly under forests of oak, hickory, and similar trees. The nearly level soils formed under prairie grasses. They have a darker and thicker surface layer than the soils that formed under forest vegetation. Also, they have a higher content of organic matter. Fayette soils are examples of soils that formed under forest vegetation. Muscatune soils are examples of soils that formed under prairie vegetation.

Climate

Climate is an important factor in the formation of soils. It influences the kind of plant and animal life on and in the soil. Precipitation affects the weathering of minerals and the transporting of soil material. Temperature determines the rate of chemical reaction that occurs in the soil. The general climate has had an important overall influence on the characteristics of the soils, but it does not cause major differences among soils in a relatively small area, such as a county.

The climate in McDonough County is temperate and humid. It is probably similar to the climate under which the soils formed.

Topography

Topography, or relief, has a marked influence on the soils through its effect on natural drainage, erosion, plant cover, and soil temperature. In McDonough County, the slopes dominantly range from 0 to 60

percent. Natural soil drainage classes range from moderately well drained on upland ridgetops to very poorly drained in depressions.

Topography influences the formation of soils by affecting runoff and drainage. Drainage in turn, through its effect on aeration of the soils, determines the color of the soil. Runoff is most rapid on the steeper slopes, but in low areas, water is temporarily ponded. Water and air move freely through well drained soils but slowly through poorly drained soils. In well aerated soils, the iron compounds that give most soils their color are brightly colored. In poorly aerated soils, the colors are gleyed and mottled. Fayette soils are examples of well drained, well aerated soils. Sable soils are examples of poorly drained, poorly aerated soils.

Time

The length of time needed for the formation of a soil depends on the other factors of soil formation. Differences in the length of time that the parent materials have been in place are commonly reflected in the degree of profile development. Soils form more rapidly and are more acid if the parent material is low in the content of calcium. Permeable soils are leached of calcium and other soluble minerals much more rapidly than slowly permeable soils. Soils form more quickly under forest vegetation than under prairie vegetation because grasses are more efficient in recycling calcium and other bases from the subsoil to the surface layer. Soils generally form more quickly in a humid climate than in a dry climate.

The soils in McDonough County range from young to mature. Most of the soils on uplands are moderately developed. The soils in the northern part of the county and on terraces are weakly developed.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu,* meaning water, plus *oll,* from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo,* meaning within, plus *aquoll,* the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, cation-exchange capacity, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, superactive, mesic Typic Endoaquolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series. The Sable series is an example of a soil series in this survey area.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the soil maps in this survey represent the soils or miscellaneous areas in the survey area. These soils or miscellaneous areas are listed as individual components in the map unit description. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives some of the soil properties and qualities that may affect planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of

erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Hickory silt loam, 10 to 18 percent slopes, eroded, is a phase of the Hickory series.

A map unit is named for the component or components that make up a dominant percentage of the map unit. Many map units consist of one dominant component. These map units are consociations. Sable silty clay loam, 0 to 2 percent slopes, is an example.

Map unit 855A, Timewell and Ipava silt loams, 0 to 2 percent slopes, is an undifferentiated group. An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them.

This survey includes miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Map unit M-W, Miscellaneous water, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

799D—Arents, loamy, hilly

Setting

Landform: Surface mines
Position on the landform: Backslopes and shoulders

Composition

Arents and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that are covered with as much as 2 feet of coarser textured fill material
- Soils that contain less than 15 percent sand

Dissimilar components:
- Areas of undisturbed Fayette and Rozetta soils
- The well drained Hickory and Marseilles soils in positions similar to those of the Arents and on the steeper slopes and escarpments
- Level areas that have depressions that are subject to ponding

Properties and Qualities of the Arents

Parent material: Mine spoil or earthy fill
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: These soils have lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Assumption Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Taxadjunct features: The Assumption soils in this survey area have a thinner dark surface layer than is defined as the range for the series.

Typical Pedon

Assumption silt loam, 2 to 5 percent slopes, at an elevation of 720 feet; 100 feet north and 300 feet east of the southwest corner of sec. 29, T. 15 N., R. 2 E.; in Henry County, Illinois; USGS Andover topographic quadrangle; lat. 41 degrees 15 minutes 00 seconds N. and long. 90 degrees 17 minutes 57 seconds W., NAD 27:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; many fine roots throughout; neutral; abrupt smooth boundary.

A—6 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine roots throughout; slightly acid; clear smooth boundary.

AB—13 to 16 inches; very dark grayish brown (10YR 3/2) silt loam mixed with some brown (10YR 4/3) in the lower 2 inches, grayish brown (10YR 5/2) and brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; many fine roots throughout; neutral; clear wavy boundary.

Bt1—16 to 26 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—26 to 35 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses in which iron has accumulated and common faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; abrupt wavy boundary.

2Bt3—35 to 51 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; common fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; many coarse prominent yellowish brown (10YR 5/8) masses in which iron has accumulated; common medium prominent light olive gray (5Y 6/2) iron depletions; slightly acid; clear wavy boundary.

2Bt4—51 to 60 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses in which iron has accumulated; slightly acid; clear wavy boundary.

2C—60 to 80 inches; brown (10YR 5/3) clay loam; massive; firm; common coarse faint grayish brown (2.5Y 5/2) iron depletions and common coarse faint brown (7.5YR 4/4) masses that have accumulated iron and are in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Thickness of the solum: 48 to more than 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silt loam
Reaction—strongly acid to neutral

2Btg or 2Bt horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—clay loam, silty clay loam, loam, clay, or silty clay
Reaction—strongly acid to neutral

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—clay loam, silty clay loam, loam, clay, or silty clay
Reaction—slightly acid to moderately alkaline

259C2—Assumption silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Assumption and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that formed entirely in loess or loamy glacial till
- Soils in which the loess is less than 20 inches thick

Dissimilar soils:
- The somewhat poorly drained Timewell and Ipava soils in the higher, less sloping positions

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer; in most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

259D2—Assumption silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Assumption and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that formed entirely in loess or loamy glacial till
- Soils in which the loess is less than 20 inches thick

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer; in most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Atlas Series

Taxonomic classification: Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs

Typical Pedon

Atlas silt loam, 5 to 10 percent slopes, eroded, at an elevation of 665 feet; 1,200 feet west and 50 feet south of the northeast corner of sec. 7, T. 1 N., R. 6 W.; in Warren County, Illinois; USGS Coatsburg topographic quadrangle; lat. 40 degrees 05 minutes 40 seconds N. and long. 91 degrees 07 minutes 52 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common very fine and fine roots; common medium prominent brown (7.5YR 5/8) and few fine distinct yellowish brown (10YR 5/6) masses of iron throughout; few fine prominent black (2.5Y 2/1) masses of iron and manganese throughout; slightly acid; clear smooth boundary.

BE—7 to 13 inches; brown (10YR 5/3) silty clay loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure; friable; common fine

roots; few fine distinct light brownish gray (10YR 6/2) clay depletions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron throughout; slightly acid; clear wavy boundary.

2Btg1—13 to 26 inches; dark gray (10YR 4/1) silty clay loam; moderate thick platy structure parting to weak fine subangular blocky; firm; common fine and few medium roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron and few fine distinct white (10YR 8/1) masses of barite throughout; moderately acid; clear wavy boundary.

2Btg2—26 to 37 inches; 87 percent dark gray (10YR 4/1) and 10 percent gray (10YR 5/1) silty clay; weak medium prismatic structure; firm; common fine and medium roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/6) masses of iron and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent rounded gravel and 1 percent subangular limestone-cherty gravel; neutral; clear wavy boundary.

2Btg3—37 to 47 inches; gray (2.5Y 5/1) silty clay; weak coarse prismatic structure; firm; common fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron throughout and few fine faint gray (10YR 6/1) iron depletions and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent angular gravel; neutral; clear wavy boundary.

2Btg4—47 to 61 inches; gray (2.5Y 5/1) clay loam; weak coarse prismatic structure; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine distinct black (2.5Y 2/1) masses of iron and manganese and few fine distinct white (10YR 8/1) barite crystals throughout; 1 percent limestone-cherty gravel and 1 percent rounded igneous-granite gravel; neutral; clear wavy boundary.

2BCg—61 to 80 inches; light brownish gray (2.5Y 6/2) clay loam; weak coarse prismatic structure; firm; few fine distinct yellowish brown (10YR 5/6) and common medium prominent brownish yellow (10YR 6/8) masses of iron throughout; 2 percent limestone-cherty gravel; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: More than 42 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—silt loam, loam, silty clay loam, or clay loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 4
Texture—silt loam or silty clay loam

Bt, Btg, or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 3
Texture—clay loam, clay, silty clay loam, or silty clay
Content of rock fragments—0 to 5 percent

2Cg horizon (if it occurs):
Hue—10YR, 7.5YR, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—2 to 15 percent

7C3—Atlas silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Composition

Atlas and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a thicker surface layer

Dissimilar soils:
• The moderately well drained Elco soils on the higher backslopes

Properties and Qualities of the Atlas Soil

Parent material: Paleosol that formed in till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: More than 80 inches

Available water capacity to a depth of 60 inches: About 7.9 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost more than 75 percent of the original surface layer; the plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

7D3—Atlas silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Atlas and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer

Dissimilar soils:
- The moderately well drained Elco soils on the higher backslopes
- The well drained Hickory and Ursa soils on the lower backslopes

Properties and Qualities of the Atlas Soil

Parent material: Paleosol that formed in till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7.9 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost more than 75 percent of the original surface layer; the plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 6e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Atterberry Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Atterberry silt loam, 0 to 2 percent slopes, at an elevation of 660 feet; 1,650 feet north and 1,120 feet east of the southwest corner of sec. 34, T. 16 N., R. 9 E.; in Bureau County, Illinois; USGS Princeton South topographic quadrangle; lat. 41 degrees 19 minutes 30 seconds N. and long. 89 degrees 26 minutes 47 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

E—9 to 13 inches; light brownish gray (10YR 6/2) silt loam; moderate thin platy structure; friable; few fine roots; common fine faint grayish brown (10YR 5/2) redoximorphic depletions; slightly acid; clear smooth boundary.

BE—13 to 17 inches; brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds and common faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; few fine dark brown (7.5YR 3/2) concretions of iron and manganese oxide; few fine faint grayish brown (10YR 5/2) iron depletions; slightly acid; clear smooth boundary.

Bt—17 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films and common faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; common fine rounded dark brown (7.5YR 3/2) concretions of iron and manganese oxide; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) iron concentrations; strongly acid; clear smooth boundary.

Btg1—24 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint grayish brown (10YR 5/2) clay films and few distinct light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; common fine rounded dark brown (7.5YR 3/2) concretions of iron and manganese oxide; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) iron concentrations; strongly acid; clear smooth boundary.

Btg2—33 to 40 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common faint grayish brown (10YR 5/2) clay films and few faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; common fine prominent rounded dark brown (7.5YR 3/2) concretions of iron and manganese oxide; many fine prominent yellowish brown (10YR 5/6) iron concentrations; strongly acid; clear smooth boundary.

Btg3—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many fine prominent yellowish brown (10YR 5/6) iron concentrations; strongly acid; clear smooth boundary.

BCg—48 to 55 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; common faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many medium prominent yellowish brown (10YR 5/6) iron concentrations; moderately acid; clear smooth boundary.

Cg—55 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) iron concentrations; slightly acid.

Range in Characteristics

Thickness of the solum: 42 to 72 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2
Reaction—moderately acid to neutral

E horizon:
Value—4 to 6
Chroma—1 or 2
Reaction—strongly acid to neutral

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam
Reaction—strongly acid to neutral

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Reaction—moderately acid to slightly alkaline

61A—Atterberry silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Atterberry and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The poorly drained Denny soils in depressions that are subject to ponding
- The well drained Greenbush soils on summits

Properties and Qualities of the Atterberry Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

Birds Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents

Typical Pedon

Birds silt loam, undrained, 0 to 2 percent slopes, frequently flooded; 2,050 feet north and 110 feet west of the southeast corner of sec. 36, T. 5 N., R. 4 W.; in McDonough County, Illinois; USGS Fandon topographic quadrangle; lat. 40 degrees 22 minutes 26 seconds N. and long. 90 degrees 47 minutes 30 seconds W., NAD 27:

Ap—0 to 9 inches; dark gray (10YR 4/1) silt loam, pale brown (10YR 6/3) dry; thin strata of dark gray (10YR 4/1), very dark gray (10YR 3/1), and light yellowish brown (10YR 6/4) silt loam; moderate fine granular structure; friable; few fine distinct yellowish brown (10YR 5/8) iron masses in the matrix; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Cg1—9 to 22 inches; gray (10YR 5/1) silt loam; thin strata of light gray (10YR 7/1) and dark gray (10YR 4/1) silt loam; massive; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions and few fine distinct yellowish brown (10YR 5/8) iron masses in the matrix; few fine rounded black (N 2/0) concretions of iron-manganese throughout the matrix; slightly effervescent; moderately alkaline; clear smooth boundary.

Cg2—22 to 37 inches; gray (10YR 5/1) silt loam; thin strata of dark gray (10YR 4/1) silt loam; massive; friable; common fine distinct light brownish gray (10YR 6/2) iron depletions and common fine distinct yellowish brown (10YR 5/8) iron masses in the matrix; few fine rounded black (N 2/0) concretions of iron-manganese throughout the matrix; neutral; clear smooth boundary.

Cg3—37 to 60 inches; light brownish gray (10YR 6/2) silt loam; thin strata of dark gray (10YR 4/1) silt loam; massive; friable; common fine distinct dark gray (10YR 4/1) iron depletions and common fine and medium distinct yellowish brown (10YR 5/8) iron masses in the matrix; few fine rounded black (N 2/0) concretions of iron-manganese throughout the matrix; slightly acid.

Range in Characteristics

Thickness of the solum: 5 to 12 inches

Ap or A horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silt loam that has thin strata of loam, sandy loam, fine sandy loam, or very fine sandy loam

1334A—Birds silt loam, undrained, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Birds and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have less clay throughout
- Soils that have more sand in the surface layer
- Soils that have a seasonal high water table at a depth of 1 to 3 feet

Dissimilar soils:
• The somewhat poorly drained Lawson and Radford soils on the higher benches on flood plains

Properties and Qualities of the Birds Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, November through June
Ponding depth: 0.5 foot above the surface, November through June
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 5w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric

3334A—Birds silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Birds and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
• Soils that have less clay throughout
• Soils that have more sand in the surface layer
• Soils that have a seasonal high water table at a depth of 1 to 3 feet

Dissimilar soils:
• The somewhat poorly drained Lawson and Radford soils on the higher benches on flood plains

Properties and Qualities of the Birds Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4w
Prime farmland status: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

Clarksdale Series

Taxonomic classification: Fine, smectitic, mesic Udollic Endoaqualfs

Typical Pedon

Clarksdale silt loam, 0 to 2 percent slopes, at an elevation of 650 feet; 800 feet south and 550 feet east of the northwest corner of sec. 16, T. 2 N., R. 7 W.; in Adams County, Illinois; USGS Lorraine topographic quadrangle; lat. 40 degrees 09 minutes 55 seconds N. and long. 91 degrees 13 minutes 18 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to weak fine subangular

blocky; friable; common fine roots throughout; neutral; abrupt smooth boundary.

E—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots throughout; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) iron concentrations lining root channels and/or pores; few fine distinct black (2.5Y 2.5/1) masses of iron and manganese throughout; many fine distinct light gray (10YR 7/1 and 7/2) clay depletions between peds; neutral; clear smooth boundary.

BE—12 to 16 inches; grayish brown (10YR 5/2) silt loam; moderate fine subangular blocky structure; friable; few fine roots throughout; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron throughout; common fine faint light gray (10YR 7/1) clay depletions between peds; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots throughout; many faint dark grayish brown (10YR 4/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent black (2.5Y 2.5/1) masses of iron and manganese and common fine distinct yellowish brown (10YR 5/6) masses of iron throughout; moderately acid; clear smooth boundary.

Bt2—23 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many faint grayish brown (10YR 5/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron throughout; common fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

Btg1—31 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; few fine roots throughout; common faint grayish brown (10YR 5/2) clay films on faces of peds and many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine and medium prominent strong brown (7.5YR 5/6) masses of iron throughout; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; few fine faint light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; neutral; gradual wavy boundary.

Btg2—47 to 57 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; firm; few fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses of iron; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; neutral; clear wavy boundary.

BCg—57 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; common medium prominent strong brown (7.5YR 5/6) and common medium prominent yellowish red (5YR 5/6) masses of iron throughout; neutral; clear wavy boundary.

Cg—67 to 80 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; few faint dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent yellowish red (5YR 4/6) and common medium prominent strong brown (7.5YR 5/6) masses of iron throughout; neutral.

Range in Characteristics

Depth to carbonates: 40 to 85 inches
Depth to the base of the argillic horizon: 40 to 60 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or BE horizon:
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—10YR

Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam, silty clay, or silt loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2

257A—Clarksdale silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Clarksdale and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker or lighter surface layer
- Soils that have a thicker and darker subsurface layer
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The poorly drained Denny soils in depressions that are subject to ponding
- The somewhat poorly drained Keomah soils in positions on the landform similar to those of the Clarksdale soil
- The well drained Greenbush soils on the slightly higher summits, shoulders, and backslopes

Properties and Qualities of the Clarksdale Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

257B—Clarksdale silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Clarksdale and similar soils: 96 percent
Dissimilar soils: 4 percent

Minor Components

Similar soils:
- Soils that have some material from the subsoil mixed in the surface layer
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The poorly drained Sable soils in low areas
- The poorly drained Denny and Rushville soils in depressions

Properties and Qualities of the Clarksdale Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Denny Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon

Denny silt loam, 0 to 2 percent slopes, at an elevation of 720 feet; 225 feet north and 1,680 feet east of the southwest corner of sec. 25, T. 7 N., R. 3 W.; in McDonough County, Illinois; USGS Good Hope topographic quadrangle; lat. 40 degrees 33 minutes 31 seconds N. and long. 90 degrees 41 minutes 14 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; very friable; few very fine roots throughout; moderately acid; abrupt smooth boundary.

Eg1—8 to 14 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak thin platy; very friable; few very fine roots throughout; few very fine vesicular pores throughout; few faint very dark gray (10YR 3/1) organic coatings in root channels; common faint grayish brown (10YR 5/2) clay depletions on faces of peds; common fine distinct dark yellowish brown (10YR 3/6) masses of iron and manganese accumulation throughout; few fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; clear smooth boundary.

Eg2—14 to 21 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure parting to moderate medium platy; friable; few very fine roots throughout; few fine tubular pores and few very fine vesicular pores throughout; few faint very dark gray (10YR 3/1) organic coatings in root channels; common fine faint dark brown (10YR 3/3) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; abrupt smooth boundary.

Btg1—21 to 29 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few faint very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; clear smooth boundary.

Btg2—29 to 38 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few faint very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent yellowish brown (10YR 5/8) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; gradual smooth boundary.

Btg3—38 to 46 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; very few fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; gradual wavy boundary.

Cg1—46 to 63 inches; light brownish gray (2.5Y 6/2) silty clay loam; massive; firm; few very fine roots between peds; few very fine vesicular pores throughout; very few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese

accumulation throughout; few medium prominent black (N 2.5/) iron and manganese concretions in the matrix; slightly acid; diffuse wavy boundary.

Cg2—63 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; many very fine vesicular pores throughout; very few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation throughout; few medium prominent black (N 2.5/) iron and manganese concretions in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

45A—Denny silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions on ground moraines

Composition

Denny and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale, Ipava, Keomah, and Muscatune soils on summits
- The poorly drained Sable soils in the slightly higher positions

Properties and Qualities of the Denny Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 1 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where drained
Hydric soil status: Hydric

Edinburg Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon

Edinburg silty clay loam, 0 to 2 percent slopes; 1,200 feet south and 276 feet east of the center of sec. 22, T. 14 N., R. 6 W.; in Sangamon County, Illinois; USGS Chatham topographic quadrangle; lat. 39 degrees 38 minutes 38 seconds N. and long. 89 degrees 45 minutes 00 seconds W., NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium granular structure; friable; common fine and very fine roots; neutral; abrupt smooth boundary.

A—8 to 10 inches; very dark gray (10YR 3/1) silty clay

loam, gray (10YR 5/1) dry; moderate medium granular and moderate very fine subangular blocky structure; firm; common fine and very fine roots; neutral; clear smooth boundary.

BEg—10 to 16 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak and moderate fine subangular blocky structure; firm; common very fine and few fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; few fine yellowish brown (10YR 5/8) concretions of iron and manganese; few fine faint very dark grayish brown (2.5Y 3/2) and few fine distinct olive brown (2.5Y 4/4) and dark grayish brown (2.5Y 4/2) redoximorphic features; neutral; clear smooth boundary.

Btg1—16 to 20 inches; dark gray (10YR 4/1) silty clay loam; moderate fine angular blocky structure; firm; few very fine roots; many distinct very dark gray (10YR 3/1) clay films on faces of peds; few fine concretions of iron and manganese; few fine distinct olive brown (2.5Y 4/4) redoximorphic features; neutral; gradual smooth boundary.

Btg2—20 to 26 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure parting to moderate medium and coarse angular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine concretions of iron and manganese; few fine distinct olive brown (2.5Y 4/4) redoximorphic features; slightly acid; gradual smooth boundary.

Btg3—26 to 34 inches; dark gray (10YR 4/1) silty clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films and few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine concretions of iron and manganese; common fine distinct yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

Btg4—34 to 41 inches; olive gray (5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; few very fine roots; few distinct dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic coatings on vertical faces of peds; few fine concretions of iron and manganese; many fine and medium prominent yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

BCg—41 to 55 inches; olive gray (5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; friable; few faint dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic coatings on vertical faces of peds; few fine concretions of iron and manganese; many fine and medium prominent yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

C—55 to 60 inches; mottled yellowish brown (10YR 5/6) and light olive gray (5Y 6/2) silt loam; massive; friable; dark gray (10YR 4/1) linings in channels; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the argillic horizon: 40 to 65 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam or silt loam
Reaction—moderately acid to slightly alkaline

BEg or Eg horizon:
Value—3 or 4
Chroma—1 or 2
Texture—silty clay loam or silt loam
Reaction—moderately acid to neutral

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay
Reaction—moderately acid to neutral

BCg or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 or 2
Reaction—slightly acid to slightly alkaline

249A—Edinburg silty clay loam, 0 to 2 percent slopes

Setting

Landform: Depressions

Composition

Edinburg and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer and a lighter colored subsurface layer
- Soils that have less clay in the subsoil

Dissimilar soils:
- The somewhat poorly drained Ipava soils in the slightly higher positions

Properties and Qualities of the Edinburg Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 3 to 6 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where drained
Hydric soil status: Hydric

Elco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Elco silt loam, 10 to 18 percent slopes, eroded, at an elevation of 730 feet; 1,900 feet west and 2,000 feet south of the northeast corner of sec. 20, T. 8 N., R. 2 W.; in Warren County, Illinois; USGS Roseville topographic quadrangle; lat. 40 degrees 40 minutes 11 seconds N. and long. 90 degrees 38 minutes 38 seconds W., NAD 27:

A—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many roots; neutral; clear smooth boundary.

E—2 to 9 inches; brown (10YR 5/3) silt loam; moderate thin platy structure; very friable; many roots; common faint very pale brown (10YR 7/3) silt coatings on faces of peds; neutral; abrupt smooth boundary.

Bt1—9 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular structure; friable; many roots; common faint dark yellowish brown (10YR 4/4) clay films; common distinct very pale brown (10YR 8/3) silt coatings; dark grayish brown (10YR 4/2) krotovinas; moderately acid; clear smooth boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; many roots; common faint dark yellowish brown (10YR 4/4) clay films; common distinct very pale brown (10YR 8/3) silt coatings; common prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Bt3—26 to 32 inches; light yellowish brown (10YR 6/4) silty clay loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few roots; common faint brown (10YR 5/3) clay films; common faint very pale brown (10YR 8/3) silt coatings; common prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Bt4—32 to 45 inches; brown (10YR 5/3) clay; many medium distinct yellowish brown (10YR 5/6) mottles; strong medium and coarse prismatic and subangular blocky structure; firm; few roots; many faint grayish brown (10YR 5/2) clay films; many prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Btg—45 to 60 inches; grayish brown (2.5Y 5/2) clay; many medium and coarse prominent yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure; firm; few roots; many faint dark grayish brown (2.5Y 4/2) clay films; many prominent black (5YR 2.5/1) stains and concretions of manganese; moderately acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Thickness of the solum: More than 48 inches
Depth to paleosol till: Less than 40 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5

Chroma—1 to 4
Texture—silt loam
Reaction—moderately acid to neutral

E horizon:
Hue—10YR
Value—4 or 5
Chrome—3 or 4
Texture—silt loam
Reaction—moderately acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silt loam
Reaction—strongly acid to slightly alkaline

2Bt or 2Btg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay loam, silty clay, or clay
Reaction—strongly acid to slightly alkaline

119C2—Elco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Composition

Elco and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that have more than 40 inches of loess over the till

Dissimilar soils:
- The somewhat poorly drained Atlas soils on nose slopes and the lower backslopes

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

119D2—Elco silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Elco and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that have a surface layer of silty clay loam

Dissimilar soils:
- The somewhat poorly drained Atlas soils on nose slopes and the lower backslopes

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.2 inches

Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

119E2—Elco silt loam, 18 to 25 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Elco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a darker and thicker surface layer

Dissimilar soils:
• The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 6e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Fayette Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fayette silt loam, 10 to 18 percent slopes, eroded, at an elevation of 680 feet; 2,100 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 12 N., R. 3 W.; in Warren County, Illinois; USGS Rozetta topographic quadrangle; lat. 40 degrees 59 minutes 13 seconds N. and long. 90 degrees 46 minutes 18 seconds W., NAD 27:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; mixed with yellowish brown (10YR 5/4) material from the subsoil; moderate medium granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.
EB—5 to 9 inches; mixed brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; common fine roots between peds; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots between peds; common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—13 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky

structure; friable; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—27 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few distinct dark brown (7.5YR 3/2) accumulations of iron-manganese on faces of peds; moderately acid; gradual wavy boundary.

BC—38 to 55 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few distinct dark brown (7.5YR 3/2) accumulations of iron-manganese on faces of peds; moderately acid; clear wavy boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct dark brown (7.5YR 3/2) concretions of iron and manganese throughout the matrix; moderately acid.

Range in Characteristics

Thickness of the solum: 36 to 70 inches
Depth to free carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 to 4
Chroma—1 to 3

E horizon (if it occurs):
Value—3 to 5
Chroma—1 to 4

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6

BC and C horizons:
Hue—10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam

280D2—Fayette silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that contain more clay in the subsoil
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Atlas and Fishhook soils on the lower backslopes

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

280F—Fayette silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have more sand in the subsoil

Dissimilar soils:
- The well drained Hickory and Marseilles soils on the lower backslopes
- The somewhat poorly drained Wakeland soils in drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 6e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Fishhook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Fishhook silt loam, 10 to 18 percent slopes, eroded; 1,000 feet south and 2,240 feet east of the northwest corner of sec. 10, T. 5 N., R. 4 W.; in McDonough County, Illinois; USGS Colchester topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 90 degrees 50 minutes 27 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; mixed with pockets of yellowish brown (10YR 5/4); light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; many very fine and few fine roots; moderately acid; abrupt smooth boundary.

BE—8 to 10 inches; yellowish brown (10YR 5/4) silt loam; moderate medium platy structure; friable; common very fine roots; moderately acid; abrupt smooth boundary.

Bt1—10 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine subangular blocky structure; friable; common very fine roots; few faint dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/1) silt coatings on faces of peds; few fine distinct light brownish gray (10YR 6/2) and few fine faint yellowish brown (10YR 5/6) redoximorphic features; few fine soft accumulations of iron and manganese; moderately acid; clear smooth boundary.

Bt2—16 to 26 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common faint brown (10YR 4/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) and common fine faint yellowish brown (10YR 5/6) redoximorphic features; common fine soft accumulations of iron and manganese; very dark grayish brown (10YR 3/2) krotovina at a depth of 32 inches; moderately acid; abrupt smooth boundary.

2Btg1—26 to 33 inches; light gray (5Y 6/1) silty clay; moderate coarse subangular blocky structure; firm; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct dark yellowish brown (10YR 4/6 and 4/4) redoximorphic features; about 1 percent pebbles; slightly acid; gradual smooth boundary.

2Btg2—33 to 56 inches; gray (5Y 5/1) silty clay; moderate medium subangular blocky structure; firm; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct dark yellowish brown (10YR 4/6 and 4/4)

redoximorphic features; about 1 percent pebbles; slightly acid; gradual smooth boundary.

3Btg3—56 to 60 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure; firm; few distinct dark gray (5Y 4/1) clay films in root channels and on faces of peds; many coarse prominent strong brown (7.5YR 5/6) redoximorphic features; about 1 percent pebbles; slightly acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches

Ap or A horizon:
Value—3 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4

2Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam, clay loam, or silty clay

6C2—Fishhook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of 3 to 5 feet
- Soils that have a thinner mantle of loess over the glacial till

Dissimilar soils:
- The well drained Hickory and Ursa soils on the lower backslopes

Properties and Qualities of the Fishhook Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 9.6 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

6D2—Fishhook silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Fishhook and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of 3 to 5 feet
- Soils that have a thinner mantle of loess over the glacial till

Dissimilar soils:
- The well drained Hickory and Ursa soils on the lower backslopes

Properties and Qualities of the Fishhook Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 9.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Greenbush Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Greenbush silt loam, 2 to 5 percent slopes, at an elevation of 700 feet; 1,500 feet west and 1,500 feet north of the southeast corner of sec. 18, T. 8 N., R. 1 W.; in Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 40 minutes 40 seconds N. and long. 90 degrees 32 minutes 45 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

E—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.

BE—10 to 17 inches; brown (10YR 4/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few distinct very dark gray (10YR 3/1) organic coatings and common distinct gray (10YR 6/1) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—17 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct gray (10YR 6/1) silt coatings on faces of peds; strongly acid; gradual smooth boundary.

Bt2—29 to 38 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron; common medium distinct light olive gray (5Y 6/2) iron depletions within peds; common prominent black (7.5YR 2.5/0) manganese oxide stains; strongly acid; gradual wavy boundary.

Bt3—38 to 53 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron; common medium distinct light olive gray (5Y 6/2) iron depletions within peds; common prominent black (7.5YR 2.5/0) manganese oxide stains; strongly acid; gradual wavy boundary.

BCt—53 to 75 inches; brown (10YR 5/3) and light olive gray (5Y 6/2) silt loam; weak medium and coarse prismatic structure parting to weak fine and medium angular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron within peds; common prominent black (7.5YR 2.5/0) manganese oxide stains; moderately acid; gradual wavy boundary.

C—75 to 100 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions and many medium prominent light olive gray (5Y 6/2) redoximorphic depletions within peds; many prominent black (7.5YR 2.5/0) manganese oxide stains; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 36 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2

E horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

675B—Greenbush silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Greenbush and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table at a depth of 2 to 4 feet

Dissimilar soils:
- The poorly drained Denny and Sable soils in depressions or low areas

Properties and Qualities of the Greenbush Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Hickory Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Hickory silt loam, 18 to 35 percent slopes, at an elevation of 228 meters; 320 feet south and 2,520 feet west of the northeast corner of sec. 18, T. 15 N., R. 6 E.; in Bureau County, Illinois; USGS Neponset topographic quadrangle; lat. 41 degrees 19 minutes 59 seconds N. and long. 89 degrees 50 minutes 50 seconds W., NAD 27:

A—0 to 4 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; common fine and medium roots throughout; 1 percent gravel; slightly acid; clear smooth boundary.

Bt1—4 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; friable; common fine roots between peds; common faint brown (7.5YR 4/4) clay films on faces of peds; 2 percent gravel; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; slightly acid; clear smooth boundary.

Bt2—13 to 23 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots between peds; many faint brown (7.5YR 4/4) clay films on faces of peds; 5 percent gravel; few fine rounded black (N 2.5/) concretions of iron-

manganese in the matrix; neutral; clear smooth boundary.

Bt3—23 to 31 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few very fine and fine roots between peds; many faint brown (7.5YR 4/4) clay films on faces of peds; 3 percent gravel; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; neutral; gradual wavy boundary.

Bt4—31 to 40 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium and coarse subangular blocky structure; firm; few very fine and fine roots between peds; common faint brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; 5 percent gravel; neutral; clear smooth boundary.

BCt—40 to 54 inches; brown (7.5YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few faint dark reddish brown (5YR 3/3) clay films on faces of peds; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; 5 percent gravel; slightly acid; clear smooth boundary.

C—54 to 60 inches; yellowish brown (10YR 5/4) clay loam; massive; firm; common faint brown (7.5YR 4/4) clay films on rocks and along pores; few medium faint yellowish brown (10YR 5/6) iron masses in the matrix; 4 percent gravel; effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 20 inches
Depth to the base of the argillic horizon: More than 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: Less than 80 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 or 3
Texture—silt loam or loam

E horizon (if it occurs):
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, silty clay loam, loam, or gravelly clay loam

CB or C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—loam, clay loam, or sandy loam or the gravelly analogs of these textures

8D2—Hickory silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain more clay or less sand in the subsoil
- Soils that have a darker surface layer

Dissimilar soils:
- The somewhat poorly drained Atlas and Fishhook soils on shoulders and backslopes

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.2 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e

Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

8F—Hickory silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay and more sand in the subsoil
- Soils that contain more clay in the subsoil
- Soils that formed in a thicker mantle of loess over the till

Dissimilar soils:
- The somewhat poorly drained Atlas and Fishhook soils on shoulders and backslopes
- The somewhat poorly drained Wakeland soils in drainageways

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.5 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 6e

Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

8G—Hickory silt loam, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Hickory and similar soils: 91 percent
Dissimilar soils: 9 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil
- Soils that formed in a thicker mantle of loess over the till

Dissimilar soils:
- The somewhat poorly drained Atlas soils on shoulders and backslopes
- The well drained Marseilles soils on the lower backslopes
- The somewhat poorly drained Wakeland soils in drainageways

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.2 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 7e

Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls
Taxadjunct features: The Ipava soil in map unit 43B2 has a thinner dark surface layer than is defined as the range for the series. This soil is classified as a fine, smectitic, mesic Aquollic Hapludalf.

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, at an elevation of 804 feet; 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; in Knox County, Illinois; USGS Oneida topographic quadrangle; lat. 41 degrees 04 minutes 40 seconds N. and long. 90 degrees 13 minutes 03 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.
A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; common faint black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.
BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions and few distinct yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.
Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix and common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; slightly acid; clear smooth boundary.
Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; slightly alkaline; gradual smooth boundary.
BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores and on a few vertical faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; common fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; slightly alkaline; clear smooth boundary.
Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few prominent very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of vertical cracks; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the argillic horizon: 35 to 55 inches
Depth to carbonates: More than 40 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

BA, Bt, Btg, BC, or BCg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Reaction—moderately acid to slightly alkaline

Cg or C horizon:
Hue—10YR or 2.5Y
Value—5 or 6

Chroma—1 to 4
Reaction—slightly acid to moderately alkaline

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Ipava and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer
- Soils that contain less clay in the subsoil
- Soils that have a grayish subsurface layer

Dissimilar soils:
- The poorly drained Denny and Edinburg soils in slight depressions on broad flats
- The poorly drained Sable and Virden soils in low areas
- The well drained Osco soils on summits

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

43B—Ipava silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Ipava and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat poorly drained Keller soils on the lower backslopes
- The poorly drained Denny and Edinburg soils in depressions
- The poorly drained Sable and Virden soils in low areas

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.9 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e

Prime farmland status: Prime farmland
Hydric soil status: Not hydric

43B2—Ipava silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Ipava and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat poorly drained Keller soils on the lower backslopes

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Keller Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquollic Hapludalfs
Taxadjunct features: The Keller soils in this survey area have a thinner dark surface layer than is defined as the range for the series.

Typical Pedon

Keller silt loam, 5 to 10 percent slopes, eroded; 500 feet north and 800 feet east of the southwest corner of sec. 35, T. 5 N., R. 3 W.; in McDonough County, Illinois; USGS Doddsville topographic quadrangle; lat. 40 degrees 22 minutes 09 seconds N. and long. 90 degrees 42 minutes 46 seconds W., NAD 27:

Ap—0 to 9 inches; mixed very dark grayish brown (10YR 3/2) and brown (10YR 5/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; friable; many very fine and common fine roots; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine soft accumulations of iron and manganese; slightly acid; abrupt smooth boundary.

Bt—9 to 12 inches; brown (10YR 5/3) silty clay loam; weak fine subangular blocky structure; friable; few distinct grayish brown (10YR 5/2) and brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; many fine and medium distinct light brownish gray (10YR 6/2) and common fine and medium distinct yellowish brown (10YR 5/6) redoximorphic features; few fine and medium soft accumulations of iron and manganese; slightly acid; clear smooth boundary.

Btg1—12 to 21 inches; gray (10YR 5/1) silty clay loam; weak medium subangular blocky structure; friable; common very fine roots; common distinct gray (5Y 5/1) clay films on faces of peds; very few distinct light gray (10YR 7/2) silt coatings on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) redoximorphic features; few fine soft accumulations of iron and manganese; slightly acid; abrupt smooth boundary.

2Btg2—21 to 31 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine prominent brown (7.5YR 4/4) and common fine prominent yellowish brown (10YR 5/8) redoximorphic features; common coarse concretions and soft accumulations of iron and

manganese; about 1 percent pebbles; moderately acid; clear smooth boundary.

2Btg3—31 to 39 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct dark yellowish brown (10YR 4/4) and common fine prominent yellowish brown (10YR 5/8) redoximorphic features; common medium soft accumulations of iron and manganese; about 5 percent pebbles; slightly acid; gradual smooth boundary.

2Btg4—39 to 51 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct dark yellowish brown (10YR 4/4), common fine prominent yellowish red (5YR 5/8), and few fine prominent red (2.5YR 4/8) redoximorphic features; common coarse concretions and soft accumulations of iron and manganese; about 5 percent pebbles; slightly acid; clear smooth boundary.

2BCg—51 to 60 inches; gray (10YR 5/1) silty clay loam; weak coarse prismatic structure; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct dark yellowish brown (10YR 4/4) and few fine prominent strong brown (7.5YR 5/8) redoximorphic features; common medium soft accumulations of iron and manganese; very dark gray (10YR 3/1) krotovina; about 5 percent pebbles; slightly acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches

Ap horizon:
Value—2 to 5
Chroma—1 to 3

Bt horizon:
Value—4 to 6
Chroma—2 to 4

2Bt or 2Btg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silty clay loam, loam, clay loam, or silty clay

470C2—Keller silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Keller and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of 3 to 5 feet
- Soils that contain less clay in the subsoil
- Soils that have slopes of less than 5 percent

Dissimilar soils:
- The well drained Ursa soils on the lower backslopes

Properties and Qualities of the Keller Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.5 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; in Adams County, Illinois; USGS Lorraine topographic quadrangle; lat. 40 degrees 11 minutes 22 seconds N. and long. 91 degrees 12 minutes 11 seconds W., NAD 27:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few distinct brown (7.5YR 4/4) masses of iron in the matrix; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common fine roots; few faint dark grayish brown (10YR 4/2) organic coatings on faces of peds and in pores; few prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; few faint light gray (10YR 7/2) clay depletions in the matrix; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; few faint grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint grayish brown (10YR 5/2) clay films on faces of peds and few faint pressure faces; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; common faint light brownish gray (10YR 6/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt4—44 to 51 inches; grayish brown (10YR 5/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few faint dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; moderately acid; clear smooth boundary.

BC1—51 to 63 inches; grayish brown (10YR 5/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; slightly acid; clear smooth boundary.

BC2—63 to 76 inches; grayish brown (10YR 5/2) silt loam; weak coarse prismatic structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; slightly acid; clear smooth boundary.

C—76 to 89 inches; grayish brown (10YR 5/2) silt loam; massive; friable; few faint strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; common prominent yellowish brown (10YR 5/6) iron concentrations in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 76 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silty clay

BC or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of more than 2 percent
- Soils that contain less clay in the subsoil

Dissimilar soils:
- The poorly drained Denny, Rushville, and Sable soils in depressions or other low areas

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

17B—Keomah silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits, shoulders, and backslopes

Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that contain less clay in the subsoil

Dissimilar soils:
- The poorly drained Denny, Rushville, and Sable soils in depressions or other low areas

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

9017A—Keomah silt loam, terrace, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Composition

Keomah and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of more than 2 percent
- Soils that contain less clay in the subsoil

Dissimilar soils:
- The poorly drained Denny, Rushville, and Sable soils in depressions or other low areas

Properties and Qualities of the Keomah Soil

Parent material: Loess or other silty material
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

9017B—Keomah silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that contain less clay in the subsoil

Dissimilar soils:
- The poorly drained Denny, Rushville, and Sable soils in depressions or other low areas

Properties and Qualities of the Keomah Soil

Parent material: Loess or other silty material
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None

Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 695 feet; 318 feet south and 1,040 feet east of the northwest corner of sec. 17, T. 17 N., R. 9 E.; in Bureau County, Illinois; USGS Princeton North topographic quadrangle; lat. 41 degrees 27 minutes 54 seconds N. and long. 89 degrees 29 minutes 14 seconds W., NAD 27:

Ap—0 to 11 inches; very dark grayish (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; few fine roots throughout; neutral; clear smooth boundary.

A1—11 to 19 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.

A2—19 to 28 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.

C1—28 to 50 inches; dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; few fine roots throughout; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; very dark grayish brown (10YR 3/2) krotovina; few fine faint brown (10YR 4/3) and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral; gradual smooth boundary.

C2—50 to 60 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; very dark grayish brown (10YR 3/2) krotovina; common fine faint dark grayish brown (10YR 4/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

C horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Lawson and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that contain more clay throughout
- Soils that have a buried soil within a depth of 60 inches

Dissimilar soils:
- The poorly drained Birds soils on flood plains

Properties and Qualities of the Lawson Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.1 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June

Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Marseilles Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Marseilles silt loam, 35 to 60 percent slopes, at an elevation of 685 feet; 1,400 feet south and 1,150 feet east of the northwest corner of sec. 14, T. 2 S., R. 6 W.; in Adams County, Illinois; USGS Liberty topographic quadrangle; lat. 39 degrees 53 minutes 57 seconds N. and long. 91 degrees 03 minutes 53 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine granular structure; friable; strongly acid; abrupt smooth boundary.

E—3 to 7 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; moderate thin platy and moderate very fine granular structure; friable; very few faint dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores; strongly acid; clear smooth boundary.

BE—7 to 10 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy and moderate very fine and fine subangular blocky structure; friable; very few distinct dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores; strongly acid; clear smooth boundary.

2Bt1—10 to 17 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; very few distinct dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores and few faint brown (10YR 5/3) clay films on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.

2Bt2—17 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium subangular blocky structure; firm; common faint brown (10YR 5/3) clay films and very few faint very pale brown (10YR 7/3) silt coatings on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.

2Bt3—22 to 35 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; very few faint brown (10YR 5/3) clay films and very few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; 1 percent gravel; very strongly acid; gradual smooth boundary.

2Cr—35 to 60 inches; 70 percent light olive brown (2.5Y 5/4) and 30 percent olive (5Y 5/3) soft shale that crushes by hand into silty clay; massive; firm; 10 percent shale gravel; very strongly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 20 to 40 inches
Depth to paralithic contact: 0 to 30 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—clay loam, silt loam, silty clay loam, or silty clay

2Cr horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4

549F—Marseilles silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Marseilles and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
• Soils that contain more clay in the surface layer and subsoil
• Soils that are underlain by sand, sandstone, or limestone

Dissimilar soils:
• The somewhat poorly drained Wakeland soils in drainageways
• The well drained Hickory soils on backslopes

Properties and Qualities of the Marseilles Soil

Parent material: Thin layer of loess over residuum derived from shale
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity to a depth of 60 inches: About 5.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 7e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

549G—Marseilles silt loam, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Marseilles and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
• Soils that contain more clay in the surface layer and subsoil
• Soils that are underlain by sand, sandstone, or limestone
• Soils that have slopes of more than 60 percent
• Soils that have outcroppings of shale or sandstone

Dissimilar soils:
• The somewhat poorly drained Wakeland soils in drainageways
• The well drained Hickory soils on backslopes

Properties and Qualities of the Marseilles Soil

Parent material: Thin layer of loess over residuum derived from shale
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity to a depth of 60 inches: About 5.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 7e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

M-W—Miscellaneous water

• This map unit consists of bodies of water at municipal sewage treatment plants and animal waste treatment facilities.

Muscatune Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Taxadjunct features: The Muscatune soil in map unit 51B2 has a thinner dark surface layer than is defined as the range for the series. This soil is classified as a fine-silty, mixed, superactive, mesic Aquollic Hapludalf.

Typical Pedon

Muscatune silt loam, 0 to 2 percent slopes, at an elevation of 692 feet; 2,500 feet west and 2,240 feet north of the southeast corner of sec. 29, T. 9 N., R. 1 W.; in Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 44 minutes 11 seconds N. and long. 90 degrees 31 minutes 46 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; abrupt smooth boundary.

A—7 to 13 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; clear smooth boundary.

AB—13 to 20 inches; mixed very dark grayish brown (10YR 3/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure parting to weak fine granular; friable; common very fine roots throughout; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.

Bt1—20 to 28 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common prominent black (5YR 2.5/1) manganese stains; neutral; clear smooth boundary.

Bt2—28 to 38 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) and faint pale brown (10YR 6/3) iron masses in the matrix; common prominent black (5YR 2.5/1) manganese stains; neutral; clear smooth boundary.

Btg—38 to 50 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots between peds; common faint grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; common prominent black (5YR 2.5/1) manganese stains; slightly acid; clear smooth boundary.

BCg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; friable; common medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; common prominent black (5YR 2.5/1) manganese stains; slightly acid; clear smooth boundary.

Cg—60 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; few fine round very dark brown (10YR 2/2) soft masses of iron and manganese; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: More than 60 inches
Depth to free carbonates: More than 40 inches
Thickness of the solum: 40 to 64 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

51A—Muscatune silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Muscatune and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer
- Soils that have a lighter colored subsurface layer
- Soils that contain more clay in the subsoil

Dissimilar soils:
- The poorly drained Denny soils in depressions
- The poorly drained Sable soils in low areas
- The well drained Osco soils on gently sloping summits

Properties and Qualities of the Muscatune Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

51B2—Muscatune silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Muscatune and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a lighter colored subsurface layer
- Soils that contain more clay in the subsoil

Dissimilar soils:
- The well drained Osco soils on gently sloping summits

Properties and Qualities of the Muscatune Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Orthents and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that are covered with as much as 2 feet of coarser textured fill material
- Soils that contain less than 15 percent sand

Dissimilar components:
- Areas of undisturbed Ipava, Osco, and Sable soils
- The well drained Hickory and Marseilles soils on the steeper slopes and escarpments
- Level areas that have depressions that are subject to ponding

Properties and Qualities of the Orthents

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.9 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soils have lost less than 25 percent of the original surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

802E—Orthents, loamy, hilly

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Orthents and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that are covered with as much as 2 feet of coarser textured fill material
- Soils that contain less than 15 percent sand

Dissimilar soils:
- Areas of undisturbed Ipava and Osco soils
- The well drained Hickory and Marseilles soils on the steeper slopes and escarpments
- Level areas that have depressions that are subject to ponding

Properties and Qualities of the Orthents

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.9 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: The soils have lost less than 25 percent of the original surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 6e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Osco soils in map units 86B2 and 86C2 have a thinner dark surface layer than is defined as the range for the series. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, at an elevation

of 858 feet; 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; in Carroll County, Illinois; USGS Lanark topographic quadrangle; lat. 42 degrees 03 minutes 15 seconds N. and long. 89 degrees 45 minutes 52 seconds W., NAD 27:

Ap—0 to 10 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.

BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt coatings and common faint dark brown (10YR 3/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coatings and many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint brown (10YR 5/3) and common medium prominent strong brown (7.5YR 5/8) redoximorphic concentrations; many prominent very dark gray (N 3/0) and many distinct dark brown (7.5YR 3/2) manganese concretions; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) redoximorphic depletions and few medium prominent strong brown (7.5YR 5/8) redoximorphic concentrations; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) redoximorphic depletions; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations and common medium distinct grayish brown (10YR 5/2) redoximorphic depletions; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the solum: 40 to more than 60 inches
Depth to free carbonates: More than 48 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—silt loam

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that are underlain by paleosol till within a depth of 60 inches

Dissimilar soils:
- The poorly drained Sable soils in low areas
- The poorly drained Denny soils in depressions
- The somewhat poorly drained Ipava soils on summits

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

86B2—Osco silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Osco and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that are underlain by paleosol till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Timewell and Ipava soils on summits
- The poorly drained Sable soils in low areas

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

86C2—Osco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that are underlain by paleosol till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 203 meters; 1,109 feet west and 1,254 feet south of the northeast corner of sec. 23, T. 17 N., R. 8 E.; in Bureau County, Illinois; USGS Buda Northeast topographic quadrangle; lat. 41 degrees 26 minutes 54 seconds N. and long. 89 degrees 32 minutes 04 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—9 to 21 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; few fine dark masses of iron and manganese throughout; slightly acid; gradual smooth boundary.

C—21 to 29 inches; stratified very dark gray (10YR 3/1) silt loam and brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine dark masses of iron and manganese throughout; slightly acid; clear smooth boundary.

Ab1—29 to 36 inches; black (10YR 2/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint very dark grayish brown (10YR 3/2) masses of iron and manganese in the matrix; few very fine dark masses of iron and manganese throughout; slightly acid; clear smooth boundary.

Ab2—36 to 43 inches; black (10YR 2/1) silty clay loam; weak medium subangular blocky structure; friable; few fine faint very dark grayish brown (10YR 3/2) masses of iron and manganese in the matrix; few very fine dark masses of iron and manganese throughout; neutral; clear smooth boundary.

Ab3—43 to 60 inches; black (10YR 2/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few very fine dark masses of iron and manganese throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the buried soil: 20 to 40 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2

C horizon:
Hue—10YR
Value—2 to 6
Chroma—1 or 2
Texture—silt loam

Ab horizon:
Hue—10YR or N
Value—2 or 3
Chroma—0 or 1
Texture—silt loam, silty clay loam, clay loam, or loam

Bgb horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2

3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Radford and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
• Soils that do not have a stratified subsurface layer
• Soils that have a light-colored surface layer

Dissimilar soils:
• The poorly drained Sawmill and Birds soils on flood plains

Properties and Qualities of the Radford Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Rapatee Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Mollic Udarents

Typical Pedon

Rapatee silty clay loam, 2 to 5 percent slopes; 1,460 feet west and 2,300 feet north of the southeast corner of sec. 11, T. 12 N., R. 3 E.; in Knox County, Illinois; USGS Victoria topographic quadrangle; lat. 41 degrees 02 minutes 23 seconds N. and long. 90 degrees 07 minutes 20 seconds W., NAD 27:

Ap—0 to 3 inches; mixed black (10YR 2/1) and very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) and gray (10YR 5/1) dry; moderate very fine subangular blocky structure; friable; common fine and very fine roots; some mixing and horizontal strata of yellowish brown (10YR 5/4 and 5/8) and grayish brown (10YR 5/2) material; about 2 percent sand; slightly acid; clear smooth boundary.
C1—3 to 18 inches; mixed black (10YR 2/1) and very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) and gray (10YR 5/1) dry; massive; firm; common fine roots; few moderate medium and coarse clods or soil fragments; some mixing and horizontal strata of yellowish brown (10YR 5/4 and 5/8) and grayish brown (10YR 5/2) material; few distinct dark stains and few fine rounded black concretions of iron and manganese; about 2 percent sand; slightly acid; abrupt wavy boundary.
C2—18 to 48 inches; mixed dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam; massive; very dense, very firm; few weak coarse clods or soil fragments; few pockets of dark olive gray (5Y 3/2) silty clay loam; common fine rounded black concretions of iron and manganese; about 8 percent sand; slightly alkaline; abrupt wavy boundary.
C3—48 to 60 inches; mixed brown (10YR 4/3), yellowish brown (10YR 5/4 and 5/6), and greenish gray (5G 5/1) clay loam; massive; extremely dense, very firm; few weak medium and coarse clods or soil fragments; common distinct dark stains and common fine black concretions of iron and manganese; about 14 percent sand; common fragments of coal and shale; common dolomitic till pebbles; strongly effervescent; slightly alkaline.

Range in Characteristics

Ap and C1 horizons:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam
Reaction—slightly acid or neutral

C horizon (above a depth of 48 inches):
Hue—10YR, 2.5Y, 5Y, 5G, 5GY, or 5BG

Value—4 to 6
Value—1 to 8
Texture—silt loam or silty clay loam

C horizon (below a depth of 48 inches):
Hue—10YR, 2.5Y, 5Y, 5G, 5GY, or 5BG
Value—4 to 6
Value—1 to 8
Texture—loam, clay loam, silt loam, or silty clay loam or the channery or gravelly analogs of these textures

872B—Rapatee silty clay loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Composition

Rapatee and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have a lighter colored surface layer

Dissimilar components:
- Active mine areas
- Areas in which water is ponded for short to long periods
- Undisturbed areas of the somewhat poorly drained Ipava, poorly drained Virden, and well drained Osco soils; around the perimeter of the mapped areas

Properties and Qualities of the Rapatee Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7.3 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 3.5 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Rozetta silt loam, 0 to 2 percent slopes, at an elevation of 890 feet; 150 feet south and 500 feet east of the center of sec. 18, T. 27 N., R. 6 E.; in Stephenson County, Illinois; USGS Pearl City topographic quadrangle; lat. 42 degrees 20 minutes 00 seconds N. and long. 89 degrees 51 minutes 19 seconds W., NAD 27:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; many fine roots throughout; moderately acid; clear wavy boundary.
E—4 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak medium platy structure; friable; many fine roots throughout; strongly acid; clear smooth boundary.
BE—11 to 14 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine roots between peds; few faint brown (10YR 5/3) (dry) clay depletions on faces of peds; strongly acid; clear smooth boundary.
Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; strongly acid; clear smooth boundary.
Bt2—21 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse subangular blocky structure; firm; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few medium faint grayish brown (10YR 5/2) iron depletions; common medium faint light yellowish brown (10YR 6/4) and brown (10YR 4/3) masses of iron in the matrix; strongly acid; clear smooth boundary.
Bt3—39 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 4/3) clay

films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions; common medium faint pale brown (10YR 6/3) masses of iron in the matrix; moderately acid; clear smooth boundary.

C—50 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium distinct dark grayish brown (10YR 4/2) iron depletions; slightly acid.

Range in Characteristics

Thickness of the solum: 42 to 72 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam or silty clay loam

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

279B—Rozetta silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Rozetta and similar soils: 91 percent
Dissimilar soils: 9 percent

Minor Components

Similar soils:
- Soils that have a darker or thicker surface layer
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Clarksdale soils on summits
- The poorly drained Sable soils in low areas

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

279C2—Rozetta silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Rozetta and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that do not have a seasonal high water table within a depth of 6 feet
- Soils that are underlain by paleosol till within a depth of 60 inches

Dissimilar soils:
• The well drained Hickory soils in the more sloping positions on the lower backslopes
• The somewhat poorly drained Keomah soils on summits

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

279D2—Rozetta silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
• Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
• The well drained Hickory and Ursa soils on the lower backslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

9279B—Rozetta silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Shoulders and summits

Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
• Soils that have a darker or thicker surface layer
• Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
• The somewhat poorly drained Clarksdale soils on summits
• The poorly drained Sable soils in low areas

Properties and Qualities of the Rozetta Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.2 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

9279C2—Rozetta silt loam, terrace, 5 to 10 percent slopes, eroded

Setting

Landform: Terraces
Position on the landform: Shoulders and backslopes

Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a darker surface layer
• Soils that do not have a seasonal high water table within a depth of 6 feet
• Soils that are underlain by loamy or sandy material within a depth of 60 inches

Dissimilar soils:
• The well drained Hickory soils in the more sloping positions on the lower backslopes
• The somewhat poorly drained Keomah soils on summits

Properties and Qualities of the Rozetta Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.2 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Rushville Series

Taxonomic classification: Fine, smectitic, mesic Typic Albaqualfs

Typical Pedon

Rushville silt loam, 0 to 2 percent slopes; 2,150 feet east and 250 feet south of the northwest corner of sec. 23, T. 1 S., R. 6 W.; in Adams County, Illinois; USGS Liberty topographic quadrangle; lat. 39 degrees 58 minutes 29 seconds N. and long. 91 degrees 03 minutes 37 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak thin platy structure parting to moderate fine granular; friable;

common fine roots; common patchy prominent irregular gray (10YR 6/1) clay depletions on faces of peds; few fine prominent irregular black (2.5Y 2/1) masses of iron-manganese throughout; neutral; clear smooth boundary.

Eg—7 to 13 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate medium subangular blocky structure parting to weak thick platy; friable; common fine roots throughout; common fine constricted tubular pores; many continuous prominent gray (10YR 6/1) clay depletions throughout; common fine distinct irregular yellowish brown (10YR 5/4) masses of iron and many fine prominent irregular black (2.5Y 2/1) masses of iron-manganese throughout; neutral; clear smooth boundary.

Btg1—13 to 21 inches; light brownish gray (10YR 6/2) silty clay; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common fine and medium roots throughout; common fine and medium continuous tubular pores; many continuous distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct irregular yellowish brown (10YR 5/6) masses of iron and few fine prominent rounded black (2.5Y 2/1) iron-manganese concretions throughout; strongly acid; clear wavy boundary.

Btg2—21 to 26 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; few fine continuous tubular pores; many continuous distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct irregular yellowish brown (10YR 5/8) masses of iron, few fine prominent irregular black (2.5Y 2/1) masses of iron-manganese, and few fine prominent rounded black (2.5Y 2/1) iron-manganese concretions throughout; moderately acid; clear wavy boundary.

Btg3—26 to 32 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; few fine continuous tubular pores; many discontinuous distinct grayish brown (10YR 5/2) clay films on faces of peds; many discontinuous prominent gray (10YR 6/1) silt coatings on vertical faces of peds; few fine prominent irregular black (2.5Y 2/1) masses of iron-manganese and many fine distinct irregular yellowish brown (10YR 5/8) masses of iron throughout; moderately acid; clear wavy boundary.

Btg4—32 to 43 inches; light brownish gray (10YR 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium and coarse subangular blocky; firm; few continuous distinct grayish brown (10YR 5/2) clay films lining root channels and/or pores; common medium prominent irregular yellowish brown (10YR 5/8) masses of iron and common fine prominent irregular brownish yellow (10YR 6/8) masses of iron throughout; moderately acid; clear wavy boundary.

Btg5—43 to 50 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few continuous distinct grayish brown (10YR 5/2) clay films lining root channels and/or pores; common medium prominent irregular yellowish brown (10YR 5/8) masses of iron throughout; moderately acid; clear wavy boundary.

Cg1—50 to 74 inches; light brownish gray (10YR 6/2) silt loam; massive; firm; few discontinuous distinct dark grayish brown (10YR 4/2) clay films lining root channels and/or pores; many medium and coarse prominent irregular strong brown (7.5YR 5/8) masses of iron and common medium distinct irregular yellowish brown (10YR 5/4) masses of iron throughout; slightly acid; clear wavy boundary.

Cg2—74 to 85 inches; light brownish gray (10YR 6/2) silt loam; massive; firm; few discontinuous distinct dark grayish brown (10YR 4/2) clay films lining root channels and/or pores; many coarse prominent irregular strong brown (7.5YR 5/8) masses of iron throughout; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 60 inches
Depth to carbonates: More than 50 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—1 or 2
Reaction—very strongly acid to neutral

Eg or BE horizon:
Hue—10YR
Value—5 or 6
Chroma—1 or 2
Texture—silt loam or silt
Reaction—very strongly acid to neutral

Btg or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam, silty clay loam, or silty clay
Reaction—very strongly acid to slightly alkaline

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam
Reaction—moderately acid to moderately alkaline

16A—Rushville silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and depressions
Position on the landform: Summits

Composition

Rushville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale and Keomah soils on summits

Properties and Qualities of the Rushville Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and high for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Not prime farmland
Hydric soil status: Hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, at an elevation of 732 feet; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R. 3 W.; in Warren County, Illinois; USGS Kirkwood East topographic quadrangle; lat. 40 degrees 46 minutes 30 seconds N. and long. 90 degrees 41 minutes 32 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark concretions of iron and manganese oxides; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine dark rounded concretions of iron and manganese; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium dark rounded concretions of iron and manganese oxides; common medium distinct brown (10YR 5/3) masses of iron in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few faint dark gray (10YR 4/1) clay films on faces of peds; many fine and medium dark rounded concretions of iron and manganese; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak

medium and coarse angular blocky; firm; few prominent grayish brown (10YR 5/2) clay films on faces of peds; common fine dark rounded concretions of iron and manganese; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 5/) silt loam; massive; friable; many fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Thickness of the solum: 40 to 60 inches

Ap or A horizon:
Hue—10YR to 5Y or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam or silt loam

Bg or Btg horizon:
Hue—10YR to 5Y or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

Cg horizon:
Hue—10YR to 5Y or N
Value—4 to 6
Chroma—0 to 2
Texture—silt loam or silty clay loam

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and toeslopes

Composition

Sable and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a seasonal high water table at a depth of 1 to 3 feet
• Soils that contain more clay in the subsoil
• Soils that have a thinner surface layer and a lighter colored subsurface layer

Dissimilar soils:
• The well drained Osco soils on summits

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 5 to 6 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 535 feet; 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; in Sangamon County, Illinois; USGS New City topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots throughout; few subrounded pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.

A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots between peds;

few subrounded pebbles 1 to 3 mm in diameter; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine concretions of manganese lining root channels and pores; neutral; clear smooth boundary.

A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots between peds; few fine concretions of manganese lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots between peds; few fine concretions of manganese lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few fine roots between peds; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine concretions of manganese lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine concretions of manganese lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; few distinct gray (10YR 5/1) clay films on faces of peds; few fine concretions of manganese lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Thickness of the solum: 36 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

Bg or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam; strata in some pedons

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or clay loam; strata in some pedons

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Sawmill and similar soils: 99 percent
Dissimilar soils: 1 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil
- Soils in which water is ponded at the surface during wet periods

Dissimilar soils:
- The somewhat poorly drained Radford and Wakeland soils on flood plains

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 13 inches

Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

Stronghurst Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Stronghurst silt loam, 0 to 2 percent slopes; 582 feet south and 78 feet west of the northeast corner of sec. 23, T. 16 N., R. 8 E.; in Bureau County, Illinois; USGS Wyanet topographic quadrangle; lat. 41 degrees 16 minutes 32 seconds N. and long. 89 degrees 31 minutes 47 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; very friable; few fine roots; common fine black (5YR 2/1) accumulations of iron and manganese; neutral; abrupt smooth boundary.

E—8 to 13 inches; brown (10YR 5/3) silt loam; moderate thin and very thin platy structure; friable; few fine roots; common fine faint light brownish gray (10YR 6/2) and common fine distinct yellowish brown (10YR 5/6 and 5/8) redoximorphic features; common fine black (5YR 5/1) accumulations of iron and manganese; strongly acid; clear smooth boundary.

Bt1—13 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films and many distinct light gray (10YR 7/2) silt coatings on faces of peds; common fine distinct light brownish gray (10YR 6/2), yellowish brown (10YR 5/8), and strong brown (7.5YR 5/6) redoximorphic features; common fine black (10YR 2/1) accumulations of iron and manganese; strongly acid; clear smooth boundary.

Bt2—24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2), yellowish brown (10YR 5/8), and strong brown (7.5YR 5/6) redoximorphic features; common fine black (10YR 2/1) accumulations of iron and manganese; strongly acid; clear smooth boundary.

Bt3—30 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/8), strong brown (7.5YR 5/6), and light brownish gray (2.5YR 6/2) redoximorphic features; common fine black (10YR 2/1) accumulations of iron and manganese; strongly acid; clear smooth boundary.

Bt4—38 to 47 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2 and 2.5Y 6/2) and yellowish brown (10YR 5/8) redoximorphic features; common fine black (10YR 2/1) accumulations of iron and manganese; strongly acid; gradual smooth boundary.

C—47 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common fine distinct strong brown (7.5YR 5/6) and light brownish gray (2.5Y 6/2) redoximorphic features; common fine black (10YR 2/1) accumulations of iron and manganese; moderately acid.

Range in Characteristics

Thickness of the solum: 45 to 53 inches

Bt horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4

278A—Stronghurst silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Stronghurst and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that contain more clay in the subsoil

Dissimilar soils:
- The well drained Rozetta soils in landform positions similar to or more sloping than those of the Stronghurst soil

Properties and Qualities of the Stronghurst Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

278B—Stronghurst silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Stronghurst and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- The well drained Rozetta soils in landform positions similar to or more sloping than those of the Stronghurst soil
- The somewhat poorly drained Wakeland soils in drainageways

Properties and Qualities of the Stronghurst Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Not hydric

Swanwick Series

Taxonomic classification: Fine-silty, mixed, active, nonacid, mesic Alfic Udarents

Typical Pedon

Swanwick silt loam, 2 to 5 percent slopes; 2,510 feet

east and 2,420 feet north of the southwest corner of sec. 26, T. 4 N., R. 3 W.; in McDonough County, Illinois; USGS Doddsville topographic quadrangle; lat. 40 degrees 18 minutes 03 seconds N. and long. 90 degrees 42 minutes 23 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; many very fine roots; about 3 percent sand and 5 percent rock fragments; few fine soft accumulations of iron and manganese; neutral; abrupt smooth boundary.

C—7 to 20 inches; mixed brown (10YR 5/3) and dark grayish brown (2.5Y 4/2) silty clay loam; massive with horizontal and vertical planes; firm; common very fine and few medium roots in the upper part; some mixing and horizontal strata of very dark grayish brown (2.5Y 3/2), yellowish brown (10YR 5/8), and light brownish gray (10YR 6/2); about 5 percent sand and 8 percent rock fragments; common fine and medium soft accumulations of iron and manganese; neutral; clear smooth boundary.

Cd1—20 to 29 inches; mixed brown (10YR 5/3) and yellowish brown (10YR 5/8) silty clay loam; massive with moderate coarse clods; very firm; some mixing and horizontal strata of dark grayish brown (2.5Y 4/2), very dark grayish brown (2.5Y 3/2), and light brownish gray (10YR 6/2); about 10 percent sand and 8 percent rock fragments; many fine and medium soft accumulations of iron and manganese; neutral; clear smooth boundary.

Cd2—29 to 44 inches; brown (10YR 5/3) silty clay loam; massive with weak coarse clods; firm; some mixing and horizontal strata of yellowish brown (10YR 5/8), gray (10YR 6/1), light brownish gray (10YR 6/2), and olive gray (5Y 4/2); about 15 percent sand and 8 percent rock fragments; many fine and medium soft accumulations of iron and manganese; slightly alkaline; gradual smooth boundary.

Cd3—44 to 60 inches; mixed dark gray (10YR 4/1), dark yellowish brown (10YR 4/4), and brown (10YR 5/3) silty clay loam; massive; firm; some mixing and horizontal strata of dark grayish brown (2.5Y 4/2), very dark gray (10YR 3/1), yellowish brown (10YR 5/8), and gray (10YR 6/1); about 18 percent sand and 12 percent rock fragments; common fine and medium soft accumulations of iron and manganese; neutral.

Range in Characteristics

Ap or A horizon:
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

C or Cd horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Texture—layers or soil fragments of silt loam, loam, or clay loam

824B—Swanwick silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Composition

Swanwick and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
• Soils in which the surface layer is silty clay loam and is darker than that of the Swanwick soil
• Soils that have a higher content of rock fragments in the lower part
• Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar components:
• The well drained Hickory, Marseilles, and Rozetta soils in adjacent unmined areas
• Steep areas adjacent to pits and final cuts
• Areas that have shallow to deep depressions in which water is ponded

Properties and Qualities of the Swanwick Soil

Parent material: Mine spoil or earthy fill
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 6.2 inches
Content of organic matter in the surface layer: 0.0 to 0.5 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 3.5 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High

Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 3e
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

Tice Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Tice silty clay loam, 0 to 2 percent slopes, frequently flooded; 1,670 feet north and 990 feet west of the southeast corner of sec. 22, T. 2 S., R. 9 W.; in Adams County, Illinois; USGS Quincy West topographic quadrangle; lat. 39 degrees 52 minutes 56 seconds N. and long. 91 degrees 25 minutes 07 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak medium granular; firm; common very fine roots throughout; neutral; abrupt smooth boundary.

A—9 to 14 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; firm; few very fine roots throughout; few fine faint brown (10YR 4/3) masses of iron in the matrix; neutral; clear smooth boundary.

BA—14 to 19 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine faint brown (7.5YR 4/3) masses of iron in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bw—19 to 35 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many medium prominent strong brown (7.5YR 4/6) masses of iron in the matrix; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bg1—35 to 44 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; many medium prominent strong brown (7.5YR 4/6) masses of iron in the matrix; moderately acid; gradual smooth boundary.

Bg2—44 to 61 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron in the matrix; slightly acid; clear smooth boundary.

Bg3—61 to 80 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium prismatic structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron in the matrix; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 30 to more than 80 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silty clay loam or silt loam
Reaction—slightly acid to slightly alkaline

Bw or Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam
Reaction—strongly acid to neutral

BC or BCg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam
Reaction—strongly acid to neutral

Cg or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—stratified silty clay loam, clay loam, loam, sandy loam, or silt loam; thin strata of fine sand in some pedons
Reaction—strongly acid to slightly alkaline

3284A—Tice silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Tice and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that contain less clay
- Soils that have a dark buried surface soil within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 0.5 foot
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The poorly drained Birds soils on meanderbelts on the lower flood plains

Properties and Qualities of the Tice Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.1 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 3w
Prime farmland status: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Timewell Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Timewell silt loam, in an area of Timewell and Ipava silt loams, 0 to 2 percent slopes, at an elevation of 750 feet; 271 feet north and 1,808 feet east of the southwest corner of sec. 7, T. 1 S., R. 4 W.; in Brown County, Illinois; USGS Kellerville topographic quadrangle; lat. 39 degrees 59 minutes 20 seconds N. and long. 90 degrees 54 minutes 20 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium platy structure parting to moderate fine granular; friable; few fine roots; neutral; abrupt smooth boundary.

AE—12 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate thin platy structure parting to weak fine granular; friable; few fine roots; common fine irregular distinct light gray (10YR 7/1) clay depletions throughout and few fine irregular prominent yellowish brown (10YR 5/8) masses of iron and few fine rounded distinct black (7.5YR 2/1) masses of iron and manganese throughout; moderately acid; clear smooth boundary.

Bt1—18 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many distinct continuous very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine irregular distinct yellowish brown (10YR 5/8) masses of iron, few fine irregular distinct grayish brown (10YR 5/2) iron depletions, and common fine rounded distinct black (7.5YR 2/1) masses of iron and manganese throughout; strongly acid; clear smooth boundary.

Bt2—22 to 29 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; many distinct continuous very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine irregular distinct yellowish brown (10YR 5/6) masses of iron, few fine irregular distinct grayish brown (10YR 5/2) iron depletions, and

common fine rounded distinct black (7.5YR 2/1) masses of iron and manganese throughout; strongly acid; clear smooth boundary.

Btg1—29 to 40 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct continuous very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine irregular distinct yellowish brown (10YR 5/4) masses of iron, common fine irregular prominent strong brown (7.5YR 5/6) masses of iron, and common fine and medium rounded prominent black (7.5YR 2/1) masses of iron and manganese throughout; moderately acid; clear smooth boundary.

Btg2—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct continuous dark gray (10YR 4/1) clay films on faces of peds and common distinct continuous very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many medium irregular distinct yellowish brown (10YR 5/4) masses of iron, common medium irregular prominent yellowish brown (10YR 5/8) masses of iron, and common prominent fine and medium rounded black (7.5YR 2/1) masses of iron and manganese throughout; moderately acid; clear smooth boundary.

Btg3—48 to 56 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots; common distinct continuous dark gray (10YR 4/1) clay films on faces of peds and few distinct continuous very dark gray (10YR 3/1) organic coatings in root channels and/or pores; few fine irregular distinct yellowish brown (10YR 5/6) masses of iron, common fine irregular prominent light yellowish brown (10YR 6/4) masses of iron, and few fine rounded prominent black (7.5YR 2/1) masses of iron and manganese throughout; moderately acid; clear smooth boundary.

BCtg—56 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium prismatic structure; friable; few fine roots; few distinct discontinuous dark gray (10YR 4/1) clay films on faces of peds and few distinct discontinuous very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many fine irregular distinct yellowish brown (10YR 5/6) masses of iron, common fine irregular distinct light yellowish brown (10YR 6/4) masses of iron, and few fine rounded prominent black (7.5YR 2/1) masses of iron and manganese throughout; moderately acid; clear smooth boundary.

Cg—67 to 80 inches; light gray (5Y 7/1) silt loam; massive; friable; very few distinct discontinuous very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many medium irregular prominent yellowish brown (10YR 5/6) masses of iron and few fine rounded prominent black (7.5YR 2/1) masses of iron and manganese throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 21 inches
Depth to the base of the argillic horizon: 45 to 70 inches
Depth to carbonates: More than 60 inches

Ap or A horizon:
Value—3 or 4
Chroma—1 or 2
Texture—silt loam
Reaction—strongly acid to neutral

E or AE horizon:
Value—3 or 4
Chroma—1 or 2
Reaction—strongly acid to neutral

Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam, silty clay, or silt loam
Reaction—very strongly acid to neutral

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 6
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

699A—Timewell silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Timewell and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a lighter colored subsurface layer
- Soils that are poorly drained
- Soils that are ponded

Dissimilar soils:
- The well drained Osco soils on summits or in the more sloping areas

Properties and Qualities of the Timewell Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 1
Prime farmland status: Prime farmland
Hydric soil status: Not hydric

855A—Timewell and Ipava silt loams, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Composition

Ipava and similar soils: 45 percent
Timewell and similar soils: 45 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a lighter colored subsurface layer
- Soils that are poorly drained
- Soils that are ponded

Dissimilar soils:
- The well drained Osco soils on summits or in the more sloping areas

Properties and Qualities of the Timewell Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.5 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None

Accelerated erosion: The soil has lost less than 25 percent of the original surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: Timewell—1; Ipava—1
Prime farmland status: Prime farmland
Hydric soil status: Timewell—not hydric; Ipava—not hydric

Ursa Series

Taxonomic classification: Fine, smectitic, mesic Chromic Vertic Hapludalfs

Typical Pedon

Ursa silt loam, 5 to 10 percent slopes, eroded; 1,900 feet west and 1,000 feet north of the southeast corner of sec. 28, T. 4 N., R. 4 W.; in McDonough County, Illinois; USGS Fandon topographic quadrangle; lat. 40 degrees 18 minutes 01 second N. and long. 90 degrees 51 minutes 25 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; some streaks and pockets of yellowish brown (10YR 5/6) clay loam from the subsoil; moderate fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/6) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films and few distinct light gray (10YR 7/2) silt coatings on faces of peds; common fine faint yellowish brown (10YR 5/8) and few fine distinct brown (10YR 5/3) redoximorphic features; few fine concretions of iron and manganese; about 1 percent pebbles; moderately acid; clear smooth boundary.

Bt2—13 to 31 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in root channels; many fine distinct yellowish brown (10YR 5/8), brownish yellow (10YR 6/8), and light brownish gray (10YR 6/2) redoximorphic features; common fine concretions of iron and manganese; about 1 percent pebbles; moderately acid; gradual smooth boundary.

Bt3—31 to 50 inches; yellowish brown (10YR 5/8) clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark grayish brown (10YR 4/2) clay films in root channels; many medium faint brownish yellow (10YR 6/8) and many medium prominent light brownish gray (10YR 6/2) redoximorphic features; many fine concretions of iron and manganese; about 5 percent pebbles; neutral; gradual smooth boundary.

Bt4—50 to 60 inches; yellowish brown (10YR 5/8) clay loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and in root channels; many medium faint brownish yellow (10YR 6/8) and many medium prominent light brownish gray (10YR 6/2) redoximorphic features; many fine concretions of iron and manganese; about 5 percent pebbles; slightly alkaline.

Range in Characteristics

Thickness of the solum: 50 to more than 60 inches

Ap or A horizon:
Value—4 or 5
Chroma—2 or 3
Texture—silt loam or loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 8
Texture—loam, clay loam, or silty clay loam

605C2—Ursa silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
• The somewhat poorly drained Fishhook and Keller soils on the upper backslopes and shoulders

Properties and Qualities of the Ursa Soil

Parent material: Paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.4 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

605D2—Ursa loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Composition

Ursa and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay
• Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
• The well drained Marseilles soils on the lower backslopes
• The somewhat poorly drained Wakeland soils on flood plains and in drainageways

Properties and Qualities of the Ursa Soil

Parent material: Paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: The soil has lost 25 to 75 percent of the original surface layer. In most areas, material from the subsoil is mixed with the surface layer.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 4e
Prime farmland status: Not prime farmland
Hydric soil status: Not hydric

Virden Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon

Virden silty clay loam, 0 to 2 percent slopes; 650 feet east and 2,260 feet north of the southwest corner of sec. 27, T. 1 N., R. 5 W.; in Schuyler County, Illinois; USGS Clayton topographic quadrangle; lat. 40 degrees 02 minutes 21 seconds N. and long. 90 degrees 58 minutes 11 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common fine concretions of iron and manganese; neutral; abrupt smooth boundary.
A—8 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine angular blocky structure; firm; common medium concretions of

iron and manganese; moderately acid; clear smooth boundary.

Btg1—12 to 16 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine angular blocky structure; firm; few faint black (10YR 2/1) organo-clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions and few fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; common medium concretions of iron and manganese; moderately acid; clear smooth boundary.

Btg2—16 to 21 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; weak medium prismatic structure parting to moderate medium angular blocky; firm; common faint very dark gray (10YR 3/1) organo-clay films on faces of peds and lining channels; many fine distinct light olive brown (2.5Y 5/4) masses of iron in the matrix; common medium concretions of iron and manganese; slightly acid; clear smooth boundary.

Btg3—21 to 32 inches; light olive gray (5Y 6/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine distinct light olive brown (2.5Y 5/4) iron accumulations; common medium concretions of iron and manganese; slightly acid; gradual smooth boundary.

Btg4—32 to 40 inches; light olive gray (5Y 6/2) silty clay loam; weak medium prismatic structure; firm; few distinct very dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; common medium concretions of iron and manganese; slightly acid; gradual smooth boundary.

Btg5—40 to 53 inches; light olive gray (5Y 6/2) silty clay loam; weak medium prismatic structure; firm; few distinct very dark gray (10YR 3/1) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) masses of iron in the matrix; common medium concretions of iron and manganese; slightly acid; gradual smooth boundary.

Cg—53 to 64 inches; gray (10YR 6/1) silty clay loam; massive; friable; common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulations in the matrix; many concretions of iron and manganese in the upper 5 inches; the upper 5 inches contains a concentration of iron that is dominantly yellowish brown (10YR 5/6); slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the argillic horizon: 40 to 60 inches
Depth to carbonates: 50 to 80 inches

Ap, A, and AB horizons:
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Btg and/or BCg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or silt loam
Reaction—moderately acid to neutral

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam
Reaction—slightly acid to moderately alkaline

50A—Virden silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes

Composition

Virden and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer
- Soils that have less clay in the surface layer

Dissimilar soils:
- The somewhat poorly drained Clarksdale and Ipava soils on the slightly higher summits

Properties and Qualities of the Virden Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches

Available water capacity to a depth of 60 inches: About 11.1 inches
Content of organic matter in the surface layer: 3 to 6 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Very slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained
Hydric soil status: Hydric

Wakeland Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Wakeland silt loam, 0 to 2 percent slopes, frequently flooded; 1,010 feet west and 2,040 feet south of the northeast corner of sec. 24, T. 22 N., R. 5 E.; in Whiteside County, Illinois; USGS Milledgeville topographic quadrangle; lat. 41 degrees 52 minutes 55 seconds N. and long. 89 degrees 51 minutes 56 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; massive; friable; many thin strata of yellowish brown (10YR 5/4) silt loam; neutral; clear smooth boundary.
C1—9 to 17 inches; brown (10YR 5/3) silt loam; massive; friable; many thin strata of yellowish brown (10YR 5/4) and dark grayish brown (10YR 4/2) silt loam; few fine soft masses of iron-manganese; few fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; neutral; clear wavy boundary.
C2—17 to 25 inches; dark grayish brown (10YR 4/2) silt loam; massive; very friable; many thin strata of yellowish brown (10YR 5/4), very dark gray (10YR 3/1), and pale brown (10YR 6/3) silt loam; common fine soft masses of iron-manganese; few fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent yellowish brown (10YR 5/8) iron masses in the matrix; neutral; clear wavy boundary.
C3—25 to 40 inches; yellowish brown (10YR 5/4) silt loam; massive; very friable; many thin strata of very dark gray (10YR 3/1) and dark grayish brown (10YR 4/2) silt loam; few very dark grayish brown (10YR 3/2) wormcasts; few distinct dark grayish brown (10YR 4/2) organic coatings in root channels; few fine soft masses of iron-manganese; few fine prominent strong brown (7.5YR 5/6) and few fine faint pale brown (10YR 6/3) iron masses in the matrix; neutral; clear wavy boundary.
C4—40 to 60 inches; brown (10YR 5/3) silt loam; massive; very friable; many thin strata of dark grayish brown (10YR 4/2), yellowish brown (10YR 5/4), and very dark gray (10YR 3/1) silt loam; few fine soft masses of iron-manganese; few fine distinct yellowish brown (10YR 5/6) and few fine faint pale brown (10YR 6/3) iron masses in the matrix; neutral.

Range in Characteristics

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—1 to 6
Texture—silt loam

3333A—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a buried soil within a depth of 40 inches
- Soils that have a seasonal high water table within a depth of 0.5 foot

Dissimilar soils:
• The poorly drained Sawmill soils on the lower meanderbelts

Properties and Qualities of the Wakeland Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 13.1 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Slight
Susceptibility to wind erosion: Slight

Interpretive Groups

Land capability classification: 2w
Prime farmland status: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

W—Water

• This map unit consists of natural bodies of water, such as ponds, lakes, and rivers.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair, poor*, and *very poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Crop Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of the soils also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents (Fehrenbacher and others, 1978). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage; erosion control; protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The relative productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture yields.—Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 6.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not take into account major and generally expensive landshaping that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, soybeans, small grain, and hay. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and forestland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7. The local office of the Cooperative Extension Service or the Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class 8 are generally not suited to crops, pasture, or forestland without a level of management

that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of the soils in the survey area is given in table 6.

Prime Farmland

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or forestland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 278,280 acres in the survey area, or nearly 74 of the total acreage, meets the soil requirements for prime farmland.

The map units in the survey area that meet the criteria for prime farmland are listed in table 7. This list does not constitute a recommendation for a particular land use. On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section “Soil Series and Detailed Soil Map Units.”

Forestland Management and Productivity

The tables in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In tables 9a, 9b, 9c, and 9d, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forestland management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forestland management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forestland management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is

described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 10 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Recreation

The soils of the survey area are rated in tables 11a and 11b according to limitations that affect their

suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 11a and 11b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 12, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are bromegrass, timothy, orchardgrass, clover, alfalfa, wheatgrass, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestems, indiangrass, blueberry, goldenrod, dandelions, blackberry, ragweed, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, birch, maple, green ash, willow, and American elm.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and tamarack.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants

are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, cattail, prairie cordgrass, bluejoint grass, asters, and beggarticks.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include Hungarian partridge, ring-necked pheasant, bobwhite quail, sharp-tailed grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, thrushes, woodpeckers, owls, tree squirrels, porcupine, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

Table 13 identifies hydric soils in McDonough County and also nonhydric soils that may have hydric inclusions. This information can help in planning land uses; however, onsite investigation is recommended to determine whether hydric soils occur and the location

of the included hydric soils (National Research Council, 1995; Hurt and others, 1998).

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of earthfill and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 14a and 14b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the

foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 15a and 15b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding,

permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 16 gives information about the soils as potential sources of reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Tables 17a and 17b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; constructing grassed waterways and surface drains; constructing terraces and diversions; and tile drains and underground outlets. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways and surface drains. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to the soil in its undisturbed condition and do not include consideration of current land use. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of

digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

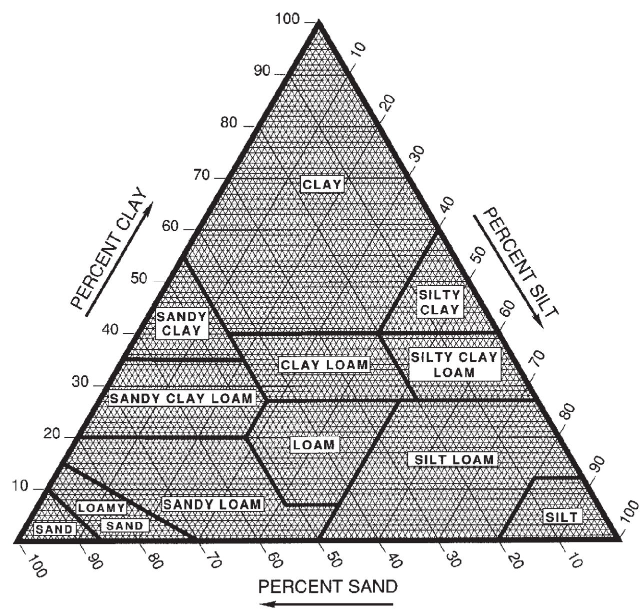


Figure 3.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

Engineering Index Properties

Table 18 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 3). “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and

plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 19 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod

at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 19, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 19 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Descriptions of these groups are available in the “National Soil Survey Handbook” (USDA, 2003).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 20 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four

groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Also shown in table 21 is the kind of water table—that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less

specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 22 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where

the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bog. Waterlogged, spongy ground, consisting primarily of mosses, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning

or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer. A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth’s surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Disintegration moraine. A drift topography characterized by chaotic mounds and pits, generally randomly oriented, developed in supraglacial drift by collapse and flow as the underlying stagnant ice melted. Slopes may be steep and unstable. Abrupt changes between materials of differing lithology are common.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A relatively small, linear depression that, at some time, moves concentrated water and either does not have a defined channel or has only a small defined channel.

Drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry

weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult

after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

High-chroma zones. Zones having chroma of 3 or more. Typical color in areas of iron concentrations.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or

roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified drift.

Kame moraine. An end moraine that contains numerous kames. A group of kames along the front of a stagnant glacier, commonly comprising the slumped remnants of a formerly continuous outwash plain built up over the foot of rapidly wasting or stagnant ice.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lakeshore. A narrow strip of land in contact with or bordering a lake; especially the beach of a lake.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or

saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Low-chroma zones. Zones having chroma of 2 or less. Typical color in areas of iron depletions.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

MAP. Mean annual precipitation, expressed in inches.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of drift in a topographic landform resulting chiefly from the direct action of glacial ice. Some types are laterial, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is

a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Parts per million (ppm). The concentration of a substance in the soil, such as phosphorus or potassium, in one million parts of air-dried soil on a weight per weight basis.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed

depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in

diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturated hydraulic conductivity (K_{sat}). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from

saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stagnation moraine. A body of drift released by the melting of a glacier that ceased flowing. Commonly, but not always, occurs near ice margins; composed of till, ice-contact stratified drift, and small areas of glacial lake sediment. Typical landforms are knob-and-kettle topography, locally including ice-walled lake plains.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swale. A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine resulting from uneven glacial deposition.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to

that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Unsorted, nonstratified drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Till plain. An extensive area of nearly level to undulating soils underlain by till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at La Harpe, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	^oF	^oF	^oF	^oF	^oF	Units	In	In	In		In
January----	32.1	12.9	22.5	60	-17	0	1.47	0.62	2.18	3	7.6
February---	38.4	18.5	28.5	69	-13	2	1.66	.87	2.36	3	4.7
March------	50.4	28.7	39.6	81	4	34	2.81	1.32	4.09	6	3.4
April------	63.0	39.0	51.0	86	19	132	3.82	2.15	5.29	7	.9
May--------	73.8	50.1	61.9	91	33	375	4.57	2.30	6.55	8	.0
June-------	83.1	59.4	71.2	97	43	639	4.38	2.43	6.10	6	.0
July-------	87.2	63.2	75.2	100	49	784	4.54	2.10	6.63	6	.0
August-----	84.9	60.9	72.9	99	46	708	3.54	2.00	4.90	6	.0
September--	77.6	52.3	64.9	95	33	451	3.99	1.86	5.83	5	.0
October----	66.1	41.0	53.5	87	22	173	2.83	1.34	4.12	5	.0
November---	49.9	29.7	39.8	75	7	30	3.15	1.32	4.69	6	1.9
December---	36.7	18.3	27.5	65	-10	3	2.28	1.04	3.34	5	6.0
Yearly:											
Average---	61.9	39.5	50.7	---	---	---	---	---	---	---	---
Extreme---	105	-23	---	101	-19	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,332	39.02	32.14	45.48	66	24.6

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at La Harpe, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 15	Apr. 21	May 4
2 years in 10 later than--	Apr. 10	Apr. 17	Apr. 30
5 years in 10 later than--	Apr. 1	Apr. 9	Apr. 21
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 18	Oct. 5	Sept. 25
2 years in 10 earlier than--	Oct. 23	Oct. 10	Sept. 30
5 years in 10 earlier than--	Nov. 1	Oct. 21	Oct. 10

Table 3.--Growing Season

(Recorded in the period 1971-2000 at La Harpe, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	194	174	152
8 years in 10	201	181	158
5 years in 10	213	194	171
2 years in 10	226	206	183
1 year in 10	232	213	189

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
*Assumption	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Atlas	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Atterberry	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Birds	Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents
Clarksdale	Fine, smectitic, mesic Udollic Endoaqualfs
Denny	Fine, smectitic, mesic Mollic Albaqualfs
Edinburg	Fine, smectitic, mesic Vertic Argiaquolls
Elco	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Fayette	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Fishhook	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Greenbush	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Ipava	Fine, smectitic, mesic Aquic Argiudolls
*Ipava	Fine, smectitic, mesic Aquollic Hapludalfs
*Keller	Fine-silty, mixed, superactive, mesic Aquollic Hapludalfs
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Marseilles	Fine-silty, mixed, active, mesic Typic Hapludalfs
Muscatune	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
*Muscatune	Fine-silty, mixed, superactive, mesic Aquollic Hapludalfs
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Osco	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Rapatee	Fine-silty, mixed, superactive, nonacid, mesic Mollic Udarents
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Rushville	Fine, smectitic, mesic Typic Albaqualfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Stronghurst	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Swanwick	Fine-silty, mixed, active, nonacid, mesic Alfic Udarents
Tice	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Timewell	Fine, smectitic, mesic Aquic Argiudolls
Ursa	Fine, smectitic, mesic Chromic Vertic Hapludalfs
Virden	Fine, smectitic, mesic Vertic Argiaquolls
Wakeland	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
6C2	Fishhook silt loam, 5 to 10 percent slopes, eroded	4,655	1.2
6D2	Fishhook silt loam, 10 to 18 percent slopes, eroded	1,798	0.5
7C3	Atlas silty clay loam, 5 to 10 percent slopes, severely eroded	1,277	0.3
7D3	Atlas silty clay loam, 10 to 18 percent slopes, severely eroded	2,401	0.6
8D2	Hickory silt loam, 10 to 18 percent slopes, eroded	5,593	1.5
8F	Hickory silt loam, 18 to 35 percent slopes	16,744	4.4
8G	Hickory silt loam, 35 to 60 percent slopes	7,019	1.9
16A	Rushville silt loam, 0 to 2 percent slopes	302	*
17A	Keomah silt loam, 0 to 2 percent slopes	12,636	3.3
17B	Keomah silt loam, 2 to 5 percent slopes	6,577	1.7
43A	Ipava silt loam, 0 to 2 percent slopes	88,040	23.3
43B	Ipava silt loam, 2 to 5 percent slopes	5,070	1.3
43B2	Ipava silt loam, 2 to 5 percent slopes, eroded	7,545	2.0
45A	Denny silt loam, 0 to 2 percent slopes	965	0.3
50A	Virden silty clay loam, 0 to 2 percent slopes	8,377	2.2
51A	Muscatune silt loam, 0 to 2 percent slopes	6,790	1.8
51B2	Muscatune silt loam, 2 to 5 percent slopes, eroded	921	0.2
61A	Atterberry silt loam, 0 to 2 percent slopes	464	0.1
68A	Sable silty clay loam, 0 to 2 percent slopes	49,702	13.2
86B	Osco silt loam, 2 to 5 percent slopes	14,854	3.9
86B2	Osco silt loam, 2 to 5 percent slopes, eroded	13,645	3.6
86C2	Osco silt loam, 5 to 10 percent slopes, eroded	6,918	1.8
119C2	Elco silt loam, 5 to 10 percent slopes, eroded	3,600	1.0
119D2	Elco silt loam, 10 to 18 percent slopes, eroded	4,421	1.2
119E2	Elco silt loam, 18 to 25 percent slopes, eroded	964	0.3
249A	Edinburg silty clay loam, 0 to 2 percent slopes	934	0.2
257A	Clarksdale silt loam, 0 to 2 percent slopes	9,976	2.6
257B	Clarksdale silt loam, 2 to 5 percent slopes	5,814	1.5
259C2	Assumption silt loam, 5 to 10 percent slopes, eroded	1,764	0.5
259D2	Assumption silt loam, 10 to 18 percent slopes, eroded	289	*
278A	Stronghurst silt loam, 0 to 2 percent slopes	389	0.1
278B	Stronghurst silt loam, 2 to 5 percent slopes	230	*
279B	Rozetta silt loam, 2 to 5 percent slopes	13,730	3.6
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	20,003	5.3
279D2	Rozetta silt loam, 10 to 18 percent slopes, eroded	2,526	0.7
280D2	Fayette silt loam, 10 to 18 percent slopes, eroded	48	*
280F	Fayette silt loam, 18 to 35 percent slopes	192	*
470C2	Keller silt loam, 5 to 10 percent slopes, eroded	1,723	0.5
549F	Marseilles silt loam, 18 to 35 percent slopes	322	*
549G	Marseilles silt loam, 35 to 60 percent slopes	1,785	0.5
605C2	Ursa silt loam, 5 to 10 percent slopes, eroded	406	0.1
605D2	Ursa loam, 10 to 18 percent slopes, eroded	3,040	0.8
675B	Greenbush silt loam, 2 to 5 percent slopes	5,656	1.5
699A	Timewell silt loam, 0 to 2 percent slopes	1,261	0.3
799D	Arents, loamy, hilly	272	*
802B	Orthents, loamy, undulating	1,225	0.3
802E	Orthents, loamy, hilly	1,143	0.3
824B	Swanwick silt loam, 2 to 5 percent slopes	1,578	0.4
855A	Timewell and Ipava silt loams, 0 to 2 percent slopes	3,554	0.9
872B	Rapatee silty clay loam, 2 to 5 percent slopes	900	0.2
1334A	Birds silt loam, undrained, 0 to 2 percent slopes, frequently flooded	1,993	0.5
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded	2,492	0.7
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	5,050	1.3
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded	1,790	0.5
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	7,907	2.1
3334A	Birds silt loam, 0 to 2 percent slopes, frequently flooded	1,533	0.4
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	3,829	1.0
9017A	Keomah silt loam, terrace, 0 to 2 percent slopes	288	*
9017B	Keomah silt loam, terrace, 2 to 5 percent slopes	444	0.1

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
9279B	Rozetta silt loam, terrace, 2 to 5 percent slopes	605	0.2
9279C2	Rozetta silt loam, terrace, 5 to 10 percent slopes, eroded	626	0.2
M-W	Miscellaneous water	49	*
W	Water	1,106	0.3
	Total	377,750	100.0

* Less than 0.1 percent.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
6C2:							
Fishhook	3e	69	20	22	42	2.4	3.9
6D2:							
Fishhook	4e	65	19	21	40	2.2	3.7
7C3:							
Atlas	4e	58	17	18	35	2.0	3.3
7D3:							
Atlas	6e	---	---	---	---	1.8	3.1
8D2:							
Hickory	3e	72	23	26	50	2.7	4.5
8F:							
Hickory	6e	---	---	---	---	2.4	4.0
8G:							
Hickory	7e	---	---	---	---	---	---
16A:							
Rushville	3w	114	36	47	64	4.2	7.0
17A:							
Keomah	2w	129	39	52	72	5.1	8.5
17B:							
Keomah	2e	128	39	51	71	5.0	8.4
43A:							
Ipava	1	163	52	66	91	6.1	10.2
43B:							
Ipava	2e	161	51	65	90	6.0	10.1
43B2:							
Ipava	2e	156	50	63	87	5.9	9.8
45A:							
Denny	3w	113	37	47	62	4.0	6.7
50A:							
Virden	2w	138	46	57	72	5.2	8.7
51A:							
Muscatune	1	167	51	64	95	6.2	10.3
51B2:							
Muscatune	2e	160	49	61	91	6.0	9.9
61A:							
Atterberry	1	149	44	60	85	5.6	9.3
68A:							
Sable	2w	156	51	61	85	5.6	9.3

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
86B:							
Osco	2e	153	46	61	88	5.8	9.7
86B2:							
Osco	2e	149	44	60	85	5.7	9.4
86C2:							
Osco	3e	146	43	58	84	5.5	9.2
119C2:							
Elco	3e	105	35	44	60	4.1	6.9
119D2:							
Elco	3e	100	33	42	57	3.9	6.5
119E2:							
Elco	6e	---	---	---	---	3.7	6.2
249A:							
Edinburg	3w	132	43	---	72	4.6	7.6
257A:							
Clarksdale	1	140	43	57	79	5.3	8.8
257B:							
Clarksdale	2e	139	43	56	78	5.2	8.7
259C2:							
Assumption	3e	120	37	53	72	4.7	7.8
259D2:							
Assumption	4e	115	35	50	69	4.5	7.5
278A:							
Stronghurst	2w	138	42	55	76	5.3	8.8
278B:							
Stronghurst	2w	137	42	54	75	5.2	8.7
279B:							
Rozetta	2e	130	40	53	72	5.1	8.6
279C2:							
Rozetta	3e	123	38	51	69	4.9	8.1
279D2:							
Rozetta	3e	118	36	49	66	4.7	7.8
280D2:							
Fayette	3e	116	35	48	61	4.7	7.8
280F:							
Fayette	6e	---	---	---	---	4.2	6.9
470C2:							
Keller	3e	86	30	40	54	3.6	6.1
549F, 549G:							
Marseilles	7e	---	---	---	---	---	---
605C2:							
Ursa	4e	57	16	20	34	2.2	3.6

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
605D2:							
Ursa	4e	54	15	19	32	2.1	3.4
675B:							
Greenbush	2e	147	42	57	82	5.5	9.2
699A:							
Timewell	1	155	49	63	85	5.8	9.7
799D:							
Arents	4e	---	---	---	---	---	---
802B:							
Orthents	2e	---	---	---	---	---	---
802E:							
Orthents	6e	---	---	---	---	---	---
824B:							
Swanwick	3e	77	28	30	---	3.1	5.1
855A:							
Timewell and Ipava	1	159	51	65	88	6.0	10.0
872B:							
Rapatee	2e	97	33	45	61	4.0	6.6
1334A:							
Birds	5w	---	---	---	---	---	---
3074A:							
Radford	3w	129	41	---	---	5.0	8.4
3107A:							
Sawmill	3w	132	42	---	---	5.0	8.3
3284A:							
Tice	3w	110	34	---	---	5.1	8.6
3333A:							
Wakeland	2w	122	41	---	---	5.0	8.0
3334A:							
Birds	4w	110	38	---	---	4.0	7.0
3451A:							
Lawson	3w	145	43	---	---	5.1	8.6
9017A:							
Keomah	2w	129	39	52	72	5.1	8.5
9017B:							
Keomah	2e	128	39	51	71	5.0	8.4
9279B:							
Rozetta	2e	130	40	53	72	5.1	8.6
9279C2:							
Rozetta	3e	123	38	51	69	4.9	8.1

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
M-W. Miscellaneous water							
W. Water							

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 7.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
17B	Keomah silt loam, 2 to 5 percent slopes
43A	Ipava silt loam, 0 to 2 percent slopes
43B	Ipava silt loam, 2 to 5 percent slopes
43B2	Ipava silt loam, 2 to 5 percent slopes, eroded
45A	Denny silt loam, 0 to 2 percent slopes (where drained)
50A	Virden silty clay loam, 0 to 2 percent slopes (where drained)
51A	Muscatune silt loam, 0 to 2 percent slopes
51B2	Muscatune silt loam, 2 to 5 percent slopes, eroded
61A	Atterberry silt loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86B	Osco silt loam, 2 to 5 percent slopes
86B2	Osco silt loam, 2 to 5 percent slopes, eroded
249A	Edinburg silty clay loam, 0 to 2 percent slopes (where drained)
257A	Clarksdale silt loam, 0 to 2 percent slopes (where drained)
257B	Clarksdale silt loam, 2 to 5 percent slopes
278A	Stronghurst silt loam, 0 to 2 percent slopes (where drained)
278B	Stronghurst silt loam, 2 to 5 percent slopes (where drained)
279B	Rozetta silt loam, 2 to 5 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
699A	Timewell silt loam, 0 to 2 percent slopes
824B	Swanwick silt loam, 2 to 5 percent slopes
855A	Timewell and Ipava silt loams, 0 to 2 percent slopes
872B	Rapatee silty clay loam, 2 to 5 percent slopes
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3334A	Birds silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
9017A	Keomah silt loam, terrace, 0 to 2 percent slopes (where drained)
9017B	Keomah silt loam, terrace, 2 to 5 percent slopes
9279B	Rozetta silt loam, terrace, 2 to 5 percent slopes

Table 8.--Forestland Productivity

(Only the soils that are commonly used as forestland are listed)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
6C2, 6D2:				
Fishhook	White oak	70	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
	Northern red oak	70	57	
	Bur oak	---	---	
	Green ash	---	---	
7C3, 7D3:				
Atlas	Bur oak	70	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
8D2, 8F:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	Tuliptree	95	100	
	White oak	85	72	
8G:				
Hickory	White oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	Black oak	---	---	
	Bitternut hickory	---	---	
	Green ash	---	---	
17A, 17B:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	White oak	65	43	
61A:				
Atterberry	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
119C2:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	---	---	
	White oak	80	57	
119D2, 119E2:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	White oak	85	72	
257A, 257B:				
Clarksdale	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Northern red oak	80	57	
278A, 278B:				
Stronghurst	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
279B, 279C2, 279D2:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
280D2, 280F:				
Fayette	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
549F:				
Marseilles	Black oak	---	---	Black oak, common hackberry, eastern white pine, green ash
	Northern red oak	66	43	
	White ash	---	---	
	White oak	66	29	
549G:				
Marseilles	White oak	66	29	Black oak, common hackberry, eastern white pine, green ash
605C2, 605D2:				
Ursa	Black oak	70	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
675B:				
Greenbush	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Black walnut	---	---	
	Tuliptree	90	86	
1334A:				
Birds	Pin oak	76	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
3074A:				
Radford	Eastern cottonwood	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Pin oak	96	72	
	Sweetgum	86	100	
	Tuliptree	90	86	
	White ash	---	---	
3107A:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum, tamarack, water hickory
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	

Table 8.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
3284A:				
Tice	Eastern cottonwood	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Pin oak	96	72	
	Sweetgum	86	100	
	Tuliptree	90	86	
	White ash	---	---	
3333A:				
Wakeland	American sycamore	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	Green ash	---	---	
	Swamp white oak	---	---	
	Tuliptree	90	88	
3334A:				
Birds	Pin oak	76	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum
3451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	White ash	---	---	
9017A, 9017B:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak
	White oak	65	43	
9279B, 9279C2:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	

Table 9a.--Forestland Management

(Only the soils that are commonly used as forestland are listed. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:						
Fishhook	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
			Wetness	0.50		
6D2:						
Fishhook	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
			Wetness	0.50		
7C3:						
Atlas	Moderate		Moderately suited		Severe	
	Stickiness/slope	0.50	Wetness	0.50	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Slope	0.50		
			Stickiness	0.50		
7D3:						
Atlas	Moderate		Poorly suited		Severe	
	Stickiness/slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
			Stickiness	0.50		
8D2:						
Hickory	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
8F:						
Hickory	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8G:						
Hickory	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
17A, 17B:						
Keomah	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
61A:						
Atterberry	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
119C2:						
Elco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 9a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
119D2:						
Elco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
119E2:						
Elco	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
257A, 257B:						
Clarksdale	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
278A, 278B:						
Stronghurst	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
279B:						
Rozetta	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
279C2:						
Rozetta	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
279D2:						
Rozetta	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
280D2:						
Fayette	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
280F:						
Fayette	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
549F:						
Marseilles	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
549G:						
Marseilles	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
605C2:						
Ursa	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 9a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
605D2:						
Ursa	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
675B:						
Greenbush	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
1334A:						
Birds	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3074A:						
Radford	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3107A:						
Sawmill	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
3284A:						
Tice	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
3333A:						
Wakeland	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
3334A:						
Birds	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Wetness	1.00		
			Low strength	0.50		
3451A:						
Lawson	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
9017A, 9017B:						
Keomah	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
9279B:						
Rozetta	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 9a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9279C2:						
Rozetta	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 9b.--Forestland Management

(Only the soils that are commonly used as forestland are listed. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:						
Fishhook	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
					Wetness	0.50
6D2:						
Fishhook	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
					Wetness	0.50
7C3:						
Atlas	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
					Slope	0.50
					Stickiness	0.50
7D3:						
Atlas	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Wetness	0.50
					Low strength	0.50
					Stickiness	0.50
8D2:						
Hickory	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8F:						
Hickory	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8G:						
Hickory	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
17A:						
Keomah	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
17B:						
Keomah	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
61A:						
Atterberry	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50

Table 9b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
119C2:						
Elco----------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
119D2, 119E2:						
Elco----------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
257A:						
Clarksdale----------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
257B:						
Clarksdale----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
278A:						
Stronghurst---------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
278B:						
Stronghurst---------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
279B:						
Rozetta-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
279C2:						
Rozetta-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
279D2:						
Rozetta-------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
280D2:						
Fayette-------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
280F:						
Fayette-------------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
549F:						
Marseilles----------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
549G:						
Marseilles----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50

Table 9b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
605C2:						
Ursa	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
605D2:						
Ursa	Slight		Severe		Moderately suited	
			Slope/erodibility	0.95	Slope	0.50
					Low strength	0.50
675B:						
Greenbush	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
1334A:						
Birds	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3074A:						
Radford	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
3107A:						
Sawmill	Slight		Slight		Poorly suited	
					Flooding	1.00
					Wetness	0.50
					Low strength	0.50
3284A:						
Tice	Slight		Slight		Poorly suited	
					Flooding	1.00
					Wetness	0.50
					Low strength	0.50
3333A:						
Wakeland	Slight		Slight		Poorly suited	
					Flooding	1.00
					Wetness	0.50
					Low strength	0.50
3334A:						
Birds	Slight		Slight		Poorly suited	
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
3451A:						
Lawson	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
9017A:						
Keomah	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50

Table 9b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9017B:						
Keomah	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
9279B:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
9279C2:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50

Table 9c.--Forestland Management

(Only the soils that are commonly used as forestland are listed. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
6C2, 6D2:						
Fishhook	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
7C3, 7D3:						
Atlas	Poorly suited		Poorly suited		Moderately suited	
	Stickiness	0.75	Stickiness	0.75	Low strength	0.50
			Slope	0.50	Stickiness	0.50
8D2:						
Hickory	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
8F:						
Hickory	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
8G:						
Hickory	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
17A:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
17B:						
Keomah	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
61A:						
Atterberry	Well suited		Well suited		Moderately suited	
					Low strength	0.50
119C2, 119D2:						
Elco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
119E2:						
Elco	Moderately suited		Poorly suited		Moderately suited	
	Stickiness	0.50	Slope	0.75	Low strength	0.50
			Stickiness	0.50	Slope	0.50
257A:						
Clarksdale	Well suited		Well suited		Moderately suited	
					Low strength	0.50
257B:						
Clarksdale	Poorly suited		Poorly suited		Moderately suited	
	Stickiness	0.75	Stickiness	0.75	Low strength	0.50
278A, 278B:						
Stronghurst	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50

Table 9c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279B:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
279C2:						
Rozetta	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
279D2:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
280D2:						
Fayette	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
280F:						
Fayette	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
549F:						
Marseilles	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
549G:						
Marseilles	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
605C2, 605D2:						
Ursa	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
			Slope	0.50		
675B:						
Greenbush	Well suited		Well suited		Moderately suited	
					Low strength	0.50
1334A:						
Birds	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3074A:						
Radford	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3107A:						
Sawmill	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
3284A:						
Tice	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3333A:						
Wakeland	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 9c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
3334A:						
Birds	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3451A:						
Lawson	Well suited		Well suited		Moderately suited	
					Low strength	0.50
9017A, 9017B:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
9279B:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
9279C2:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		

Table 9d.--Forestland Management

(Only the soils that are commonly used as forestland are listed. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2, 6D2:						
Fishhook	Well suited		Well suited		Low	
7C3, 7D3:						
Atlas	Poorly suited		Well suited		High	
	Stickiness	0.50			Wetness	1.00
8D2:						
Hickory	Well suited		Well suited		Low	
8F:						
Hickory	Poorly suited		Poorly suited		Low	
	Slope	0.50	Slope	0.50		
8G:						
Hickory	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00		
17A, 17B:						
Keomah	Well suited		Well suited		High	
					Wetness	1.00
61A:						
Atterberry	Well suited		Well suited		High	
					Wetness	1.00
119C2, 119D2:						
Elco	Well suited		Well suited		Low	
119E2:						
Elco	Poorly suited		Poorly suited		Low	
	Slope	0.50	Slope	0.50		
257A:						
Clarksdale	Well suited		Well suited		High	
					Wetness	1.00
257B:						
Clarksdale	Poorly suited		Well suited		High	
	Stickiness	0.50			Wetness	1.00
278A, 278B:						
Stronghurst	Well suited		Well suited		High	
					Wetness	1.00
279B, 279C2, 279D2:						
Rozetta	Well suited		Well suited		Low	
280D2:						
Fayette	Well suited		Well suited		Low	
280F:						
Fayette	Poorly suited		Poorly suited		Low	
	Slope	0.50	Slope	0.50		

Table 9d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
549F:						
Marseilles----------	Poorly suited		Poorly suited		Low	
	Slope	0.50	Slope	0.50		
549G:						
Marseilles----------	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00		
605C2, 605D2:						
Ursa----------------	Well suited		Well suited		Low	
675B:						
Greenbush-----------	Well suited		Well suited		Low	
1334A:						
Birds---------------	Well suited		Well suited		High	
					Wetness	1.00
3074A:						
Radford-------------	Well suited		Well suited		Low	
3107A:						
Sawmill-------------	Well suited		Well suited		High	
					Wetness	1.00
3284A:						
Tice----------------	Well suited		Well suited		High	
					Wetness	1.00
3333A:						
Wakeland------------	Well suited		Well suited		High	
					Wetness	1.00
3334A:						
Birds---------------	Well suited		Well suited		High	
					Wetness	1.00
3451A:						
Lawson--------------	Well suited		Well suited		Low	
9017A, 9017B:						
Keomah--------------	Well suited		Well suited		High	
					Wetness	1.00
9279B, 9279C2:						
Rozetta-------------	Well suited		Well suited		Low	

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
6C2, 6D2: Fishhook	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7C3, 7D3: Atlas	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
8D2, 8F, 8G: Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
16A: Rushville	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
17A, 17B: Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
43A, 43B, 43B2: Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
45A: Denny	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
50A: Virden	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
51A, 51B2: Muscatune	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
61A:					
Atterberry	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
68A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
86B, 86B2, 86C2:					
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
119C2, 119D2, 119E2: Elco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
249A: Edinburg	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
257A, 257B: Clarksdale	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
259C2, 259D2: Assumption	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
278A, 278B: Stronghurst	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
279B, 279C2, 279D2: Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280D2, 280F: Fayette	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
470C2:					
Keller	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
549F, 549G:					
Marseilles	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
605C2, 605D2:					
Ursa	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
675B: Greenbush	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
699A: Timewell	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
799D: Arents	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
802B, 802E. Orthents					

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
824B:					
Swanwick	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
855A:					
Timewell	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
872B:					
Rapatee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
1334A:					
Birds	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3074A:					
Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3284A:					
Tice	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3333A:					
Wakeland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
3334A:					
Birds	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
9017A, 9017B:					
Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
9279B, 9279C2:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
M-W. Miscellaneous water					
W. Water					

Table 11a.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
6C2:						
Fishhook	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.98	Restricted permeability	0.96	Slope	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Restricted permeability	0.96
6D2:						
Fishhook	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.98	Slope	0.96	Slope	1.00
	Slope	0.96	Restricted permeability	0.96	Depth to saturated zone	0.98
	Restricted permeability	0.96	Depth to saturated zone	0.75	Restricted permeability	0.96
7C3:						
Atlas	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	1.00
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	1.00
	Slope	0.96	Slope	0.96	Depth to saturated zone	1.00
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
8F, 8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
16A:						
Rushville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96

Table 11a.--Recreation--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17B:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
					Slope	0.28
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
43B, 43B2:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.28
					Restricted permeability	0.21
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
50A:						
Virden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
51A:						
Muscatune	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
51B2:						
Muscatune	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Slope	0.28
61A:						
Atterberry	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00

Table 11a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
86B, 86B2:						
Osco----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
86C2:						
Osco----------------	Not limited		Not limited		Very limited	
					Slope	1.00
119C2:						
Elco----------------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
					Restricted permeability	0.43
119D2:						
Elco----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
119E2:						
Elco----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
249A:						
Edinburg------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
257A:						
Clarksdale----------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
257B:						
Clarksdale----------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.28
					Restricted permeability	0.21
259C2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
					Restricted permeability	0.43
259D2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43

Table 11a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
278A:						
Stronghurst	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
278B:						
Stronghurst	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
					Slope	0.28
279B:						
Rozetta	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279C2:						
Rozetta	Not limited		Not limited		Very limited	
					Slope	1.00
279D2:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
280D2:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
280F:						
Fayette	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
470C2:						
Keller	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.98	Restricted permeability	0.96	Slope	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Restricted permeability	0.96
549F, 549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Depth to bedrock	0.10
605C2:						
Ursa	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
					Restricted permeability	0.96
605D2:						
Ursa	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Slope	0.16	Slope	0.16	Restricted permeability	0.96
675B:						
Greenbush	Not limited		Not limited		Somewhat limited	
					Slope	0.28

Table 11a.--Recreation--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
699A:						
Timewell	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
799D:						
Arents	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
802B:						
Orthents	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
824B:						
Swanwick	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Slope	0.28
855A:						
Timewell	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
872B:						
Rapatee	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
					Slope	0.28
1334A:						
Birds	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3074A:						
Radford	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
	Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98

Table 11a.--Recreation--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.40	Depth to saturated zone	1.00
3284A:						
Tice	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.94	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.40	Depth to saturated zone	1.00
3333A:						
Wakeland	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.94	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.40	Depth to saturated zone	1.00
3334A:						
Birds	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40	Flooding	1.00
3451A:						
Lawson	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
	Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
9017A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
9017B:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
					Slope	0.28
9279B:						
Rozetta	Not limited		Not limited		Somewhat limited	
					Slope	0.28
9279C2:						
Rozetta	Not limited		Not limited		Very limited	
					Slope	1.00
M-W. Miscellaneous water						
W. Water						

Table 11b.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:						
Fishhook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
6D2:						
Fishhook	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
7C3:						
Atlas	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
7D3:						
Atlas	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Slope	0.96
					Depth to saturated zone	0.94
8D2:						
Hickory	Not limited		Not limited		Somewhat limited	
					Slope	0.96
8F:						
Hickory	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Slope	1.00
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
16A:						
Rushville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
17A, 17B:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
43A, 43B, 43B2:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 11b.--Recreation--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50A:						
Virden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
51A, 51B2:						
Muscatune	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
61A:						
Atterberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
86B, 86B2, 86C2:						
Osco	Not limited		Not limited		Not limited	
119C2:						
Elco	Not limited		Not limited		Not limited	
119D2:						
Elco	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
119E2:						
Elco	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.50				
249A:						
Edinburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
257A, 257B:						
Clarksdale	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
259C2:						
Assumption	Not limited		Not limited		Not limited	
259D2:						
Assumption	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
278A, 278B:						
Stronghurst	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
279B, 279C2:						
Rozetta	Not limited		Not limited		Not limited	

Table 11b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
279D2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
280D2:						
Fayette	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
280F:						
Fayette	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.02		
470C2:						
Keller	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
549F:						
Marseilles	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Slope	1.00
					Depth to bedrock	0.10
549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.10
605C2:						
Ursa	Not limited		Not limited		Not limited	
605D2:						
Ursa	Not limited		Not limited		Somewhat limited	
					Slope	0.16
675B:						
Greenbush	Not limited		Not limited		Not limited	
699A:						
Timewell	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
799D:						
Arents	Not limited		Not limited		Somewhat limited	
					Slope	0.96
802B:						
Orthents	Not limited		Not limited		Not limited	
802E:						
Orthents	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.68				
824B:						
Swanwick	Not limited		Not limited		Not limited	
855A:						
Timewell	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 11b.--Recreation--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
855A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
872B:						
Rapatee	Not limited		Not limited		Not limited	
1334A:						
Birds	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3074A:						
Radford	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3284A:						
Tice	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.94
3333A:						
Wakeland	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.94
3334A:						
Birds	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
3451A:						
Lawson	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
9017A, 9017B:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
9279B, 9279C2:						
Rozetta	Not limited		Not limited		Not limited	

Table 11b.--Recreation--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
M-W. Miscellaneous water						
W. Water						

Table 12.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
6C2, 6D2:										
Fishhook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7C3:										
Atlas	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7D3:										
Atlas	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
8D2:										
Hickory	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
8F, 8G:										
Hickory	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
16A:										
Rushville	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
17A:										
Keomah	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
17B:										
Keomah	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
43A:										
Ipava	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
43B, 43B2:										
Ipava	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
45A:										
Denny	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
50A:										
Virden	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
51A, 51B2:										
Muscatune	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
61A:										
Atterberry	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
68A:										
Sable	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
86B, 86B2:										
Osco	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
86C2:										
Osco	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
119C2: Elco	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
119D2: Elco	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
119E2: Elco	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
249A: Edinburg	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
257A: Clarksdale	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
257B: Clarksdale	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
259C2: Assumption	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Fair	Very poor
259D2: Assumption	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
278A, 278B: Stronghurst	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
279B: Rozetta	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
279C2: Rozetta	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
279D2: Rozetta	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
280D2: Fayette	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
280F: Fayette	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
470C2: Keller	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
549F, 549G: Marseilles	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
605C2, 605D2:										
Ursa	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
675B:										
Greenbush	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
699A:										
Timewell	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
799D:										
Arents	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802B, 802E.										
Orthents										
824B:										
Swanwick	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
855A:										
Timewell	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Ipava	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
872B:										
Rapatee	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
1334A:										
Birds	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
3074A:										
Radford	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3107A:										
Sawmill	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
3284A:										
Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3333A:										
Wakeland	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3334A:										
Birds	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
3451A:										
Lawson	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
9017A:										
Keomah	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
9017B:										
Keomah	Good	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
9279B:										
Rozetta	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
9279C2:										
Rozetta-----------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
M-W.										
Miscellaneous water										
W.										
Water										

Table 13.--Hydric Soils

(Only the map units that have hydric components are listed. See text for a description of hydric qualities)

Map symbol and map unit name	Component	Hydric status	Local landform
16A:			
Rushville silt loam, 0 to 2 percent slopes	Rushville	Yes	ground moraine, depression
17A:			
Keomah silt loam, 0 to 2 percent slopes	Keomah	No	ground moraine
	Denny	Yes	depression
	Rushville	Yes	depression
	Sable	Yes	depression
17B:			
Keomah silt loam, 2 to 5 percent slopes	Keomah	No	ground moraine
	Denny	Yes	depression
	Rushville	Yes	depression
	Sable	Yes	depression
43A:			
Ipava silt loam, 0 to 2 percent slopes	Ipava	No	ground moraine
	Denny	Yes	depression
	Sable	Yes	depression
43B:			
Ipava silt loam, 2 to 5 percent slopes	Ipava	No	ground moraine
	Denny	Yes	depression
	Edinburg	Yes	depression
	Sable	Yes	ground moraine
	Virden	Yes	ground moraine
45A:			
Denny silt loam, 0 to 2 percent slopes	Denny	Yes	depression
	Sable	Yes	ground moraine
50A:			
Virden silty clay loam, 0 to 2 percent slopes	Virden	Yes	ground moraine
51A:			
Muscatune silt loam, 0 to 2 percent slopes	Muscatune	No	ground moraine
	Denny	Yes	depression
	Sable	Yes	depression
61A:			
Atterberry silt loam, 0 to 2 percent slopes	Atterberry	No	ground moraine
	Denny	Yes	depression
68A:			
Sable silty clay loam, 0 to 2 percent slopes	Sable	Yes	ground moraine
86B:			
Osco silt loam, 2 to 5 percent slopes	Osco	No	ground moraine
	Denny	Yes	depression
	Sable	Yes	ground moraine
86B2:			
Osco silt loam, 2 to 5 percent slopes, eroded	Osco	No	ground moraine
	Sable	Yes	ground moraine

Table 13.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
249A:			
Edinburg silty clay loam, 0 to 2 percent slopes	Edinburg	Yes	depression
257A:			
Clarksdale silt loam, 0 to 2 percent slopes	Clarksdale	No	ground moraine
	Denny	Yes	depression
257B:			
Clarksdale silt loam, 2 to 5 percent slopes	Clarksdale	No	ground moraine
	Denny	Yes	depression
	Rushville	Yes	depression
	Sable	Yes	ground moraine
279B:			
Rozetta silt loam, 2 to 5 percent slopes	Rozetta	No	ground moraine
	Sable	Yes	ground moraine
675B:			
Greenbush silt loam, 2 to 5 percent slopes	Greenbush	No	ground moraine
	Denny	Yes	depression
	Sable	Yes	ground moraine
802B:			
Orthents, loamy, undulating	Orthents	No	ground moraine
	Sable	Yes	depression
872B:			
Rapatee silty clay loam, 2 to 5 percent slopes	Rapatee	No	ground moraine
	Virden	Yes	ground moraine
1334A:			
Birds silt loam, undrained, 0 to 2 percent slopes, frequently flooded	Birds	Yes	flood plain
3074A:			
Radford silt loam, 0 to 2 percent slopes, frequently flooded	Radford	No	flood plain
	Birds	Yes	flood plain
	Sawmill	Yes	flood plain
3107A:			
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Yes	flood plain
3284A:			
Tice silty clay loam, 0 to 2 percent slopes, frequently flooded	Tice	No	flood plain
	Birds	Yes	flood plain
3333A:			
Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	Wakeland	No	flood plain
	Sawmill	Yes	flood plain

Table 13.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
3334A:			
Birds silt loam, 0 to 2 percent slopes, frequently flooded	Birds	Yes	flood plain
3451A:			
Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	No	flood plain
	Birds	Yes	flood plain
9017A:			
Keomah silt loam, terrace, 0 to 2 percent slopes	Keomah	No	stream terrace
	Denny	Yes	depression
	Rushville	Yes	depression
	Sable	Yes	depression
9017B:			
Keomah silt loam, terrace, 2 to 5 percent slopes	Keomah	No	stream terrace
	Denny	Yes	depression
	Rushville	Yes	depression
	Sable	Yes	depression

Table 14a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
6C2:						
Fishhook	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.97
					Shrink-swell	0.50
6D2:						
Fishhook	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.98
7C3:						
Atlas	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
					Slope	0.97
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.96	Slope	0.96	Depth to saturated zone	1.00
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8F, 8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
16A:						
Rushville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Ponding	1.00	Shrink-swell	1.00
	Ponding	1.00			Ponding	1.00
17A, 17B:						
Keomah	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
43A, 43B, 43B2:						
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
50A:						
Virden	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
51A, 51B2:						
Muscatune	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
61A:						
Atterberry	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B, 86B2:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
86C2:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
119C2:						
Elco	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.97
			Depth to saturated zone	0.99	Shrink-swell	0.50
119D2:						
Elco	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
119E2:						
Elco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
249A:						
Edinburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
257A:						
Clarksdale	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
257B:						
Clarksdale	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
259C2:						
Assumption	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.99	Slope	0.97
259D2:						
Assumption	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
278A, 278B:						
Stronghurst	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
279B:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
279C2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
279D2:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
280D2:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
280F:						
Fayette	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
470C2:						
Keller	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.97
					Shrink-swell	0.50
549F, 549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to soft bedrock	0.10		
605C2:						
Ursa	Very limited		Somewhat limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
			Depth to saturated zone	0.15	Slope	0.97
605D2:						
Ursa	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
	Slope	0.16	Slope	0.16	Shrink-swell	1.00
			Depth to saturated zone	0.15		
675B:						
Greenbush	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
699A:						
Timewell	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
799D:						
Arents	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
			Depth to saturated zone	0.16		
802B:						
Orthents	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
824B:						
Swanwick	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		
855A:						
Timewell	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
872B:						
Rapatee	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1334A:						
Birds	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3284A:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3333A:						
Wakeland	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3334A:						
Birds	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
9017A, 9017B:						
Keomah	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
9279B:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
9279C2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
M-W.						
Miscellaneous water						
W.						
Water						

Table 14b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
6C2:						
Fishhook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
6D2:						
Fishhook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Shrink-swell	1.00	Slope	0.96	Depth to saturated zone	0.75
	Slope	0.96	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
7C3:						
Atlas	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00	Too clayey	0.02		
	Depth to saturated zone	0.94				
7D3:						
Atlas	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.94
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Slope	0.96	Too clayey	0.02		
	Depth to saturated zone	0.94				
8D2:						
Hickory	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8F, 8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
16A:						
Rushville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.50		
	Shrink-swell	1.00				
	Ponding	1.00				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A, 17B:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
43A, 43B, 43B2:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
50A:						
Virden	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
51A, 51B2:						
Muscatune	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
61A:						
Atterberry	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
68A:						
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
86B, 86B2, 86C2:						
Osco	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
119C2:						
Elco	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119D2:						
Elco	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119E2:						
Elco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
249A:						
Edinburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
257A, 257B:						
Clarksdale	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
259C2:						
Assumption	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
259D2:						
Assumption	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
278A, 278B:						
Stronghurst	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
279B, 279C2:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
279D2:						
Rozetta	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
280D2:						
Fayette	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.10		
	Slope	0.96				
	Shrink-swell	0.50				
280F:						
Fayette	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
470C2:						
Keller	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
549F, 549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
	Low strength	1.00	Depth to soft bedrock	0.10		
	Shrink-swell	0.50				
605C2:						
Ursa	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.15		
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Frost action	0.50	Too clayey	0.01		
605D2:						
Ursa	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.16	Slope	0.16
	Shrink-swell	1.00	Depth to saturated zone	0.15		
	Frost action	0.50	Cutbanks cave	0.10		
	Slope	0.16	Too clayey	0.01		
675B:						
Greenbush	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
699A:						
Timewell	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
799D:						
Arents	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Depth to saturated zone	0.16		
	Slope	0.96	Cutbanks cave	0.10		
802B:						
Orthents	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
824B:						
Swanwick	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.47		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
855A:						
Timewell	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
872B:						
Rapatee	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to dense layer	0.50		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
1334A:						
Birds	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
3074A:						
Radford	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	1.00				
	Shrink-swell	0.50				
3284A:						
Tice	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
3333A:						
Wakeland	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
3334A:						
Birds	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
9017A, 9017B:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
9279B, 9279C2:						
Rozetta	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
M-W.						
Miscellaneous water						
W.						
Water						

Table 15a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:				
Fishhook	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.01
6D2:				
Fishhook	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.01
	Slope	0.96		
7C3:				
Atlas	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	1.00		
7D3:				
Atlas	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	1.00		
	Slope	0.96		
8D2:				
Hickory	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8F, 8G:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
16A:				
Rushville	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
17A:				
Keomah	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
17B:				
Keomah	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.18
43A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
43B, 43B2:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.18
45A:				
Denny	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
50A:				
Virden	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
51A:				
Muscatune	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
51B2:				
Muscatune	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
61A:				
Atterberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:				
Sable	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
86B, 86B2:				
Osco	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
86C2:				
Osco	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
119C2:				
Elco	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.96
	Restricted permeability	1.00	Seepage	0.53
119D2:				
Elco	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.96
	Restricted permeability	1.00	Seepage	0.53
	Slope	0.96		
119E2:				
Elco	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.96
	Slope	1.00		
	Restricted permeability	1.00	Seepage	0.53
249A:				
Edinburg	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
			Depth to saturated zone	1.00
	Ponding	1.00		
	Depth to saturated zone	1.00	Seepage	0.28
257A:				
Clarksdale	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
257B:				
Clarksdale	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
			Slope	0.18
259C2:				
Assumption	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Depth to saturated zone	0.96
			Seepage	0.53
259D2:				
Assumption	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Depth to saturated zone	0.96
	Slope	0.96	Seepage	0.53
278A:				
Stronghurst	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
278B:				
Stronghurst	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
279B:				
Rozetta	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18
279C2:				
Rozetta	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
	Depth to saturated zone	0.40	Seepage	0.53
279D2:				
Rozetta	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40		
280D2:				
Fayette	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
280F:				
Fayette	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
470C2:				
Keller	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.01
549F, 549G:				
Marseilles	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00		
605C2:				
Ursa	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	0.40		
605D2:				
Ursa	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	0.40		
	Slope	0.16		
675B:				
Greenbush	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
699A:				
Timewell	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
799D:				
Arents	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.96		
	Depth to saturated zone	0.43		
802B:				
Orthents	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
802E:				
Orthents	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
824B:				
Swanwick	Very limited		Somewhat limited	
	Restricted permeability	1.00	Depth to saturated zone	0.39
	Depth to saturated zone	0.94	Slope	0.18
855A:				
Timewell	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
872B:				
Rapatee	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.18
1334A:				
Birds	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3074A:				
Radford	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3284A:				
Tice	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
3333A:				
Wakeland	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3334A:				
Birds	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
9017A:				
Keomah	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.08
9017B:				
Keomah	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.18
9279B:				
Rozetta	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
9279C2:				
Rozetta	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
M-W.				
Miscellaneous water				
W.				
Water				

Table 15b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:						
Fishhook	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
6D2:						
Fishhook	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
7C3:						
Atlas	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00	Slope	0.96	Depth to saturated zone	1.00
	Slope	0.96			Slope	0.96
8D2:						
Hickory	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
8F, 8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
16A:						
Rushville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Too clayey	0.50
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
17B:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43A, 43B, 43B2:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
50A:						
Virden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
51A, 51B2:						
Muscatune	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
61A:						
Atterberry	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
86B, 86B2:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86C2:						
Osco	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
119C2:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.32	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.25
119D2:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.32	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.25

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
119E2:						
Elco	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.25
249A:						
Edinburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
257A, 257B:						
Clarksdale	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
259C2:						
Assumption	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.25
259D2:						
Assumption	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.25
278A, 278B:						
Stronghurst	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
279B, 279C2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
279D2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Too clayey	0.50
	Too clayey	0.50				
280D2:						
Fayette	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
280F:						
Fayette	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
470C2:						
Keller	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
549F, 549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
605C2:						
Ursa	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
605D2:						
Ursa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
					Slope	0.16
	Too clayey	1.00	Slope	0.16		
	Slope	0.16				
675B:						
Greenbush	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
699A:						
Timewell	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
799D:						
Arents	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
					Too clayey	0.50
	Slope	0.96	Slope	0.96		
	Too clayey	0.50				
802B:						
Orthents	Not limited		Not limited		Not limited	
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
824B:						
Swanwick	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
855A:						
Timewell	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
855A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
872B:						
Rapatee	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
1334A:						
Birds	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00		
3074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
3284A:						
Tice	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
3333A:						
Wakeland	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3334A:						
Birds	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
9017A, 9017B:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9279B, 9279C2:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
M-W.						
Miscellaneous water						
W.						
Water						

Table 16.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
6C2:						
Fishhook	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.14
	Too acid	0.88	Depth to saturated zone	0.14	Too clayey	0.64
	Water erosion	0.90	Shrink-swell	0.36		
	Too clayey	0.98				
6D2:						
Fishhook	Fair		Fair		Fair	
	Too clayey	0.08	Depth to saturated zone	0.14	Slope	0.04
	Low content of organic matter	0.12	Shrink-swell	0.28	Too clayey	0.05
	Too acid	0.88			Depth to saturated zone	0.14
	Water erosion	0.90				
7C3:						
Atlas	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.88	Shrink-swell	0.51		
7D3:						
Atlas	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.88	Shrink-swell	0.12	Slope	0.04
8D2:						
Hickory	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.88	Shrink-swell	0.94	Too clayey	0.57
	Too clayey	0.98			Rock fragments	0.88
8F:						
Hickory	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
	Too acid	0.88	Low strength	0.00	Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.94	Rock fragments	0.88
8G:						
Hickory	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
	Too acid	0.68	Low strength	0.00	Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.99	Rock fragments	0.88
	Water erosion	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
16A:						
Rushville-----------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
	Water erosion	0.37	Shrink-swell	0.49		
	Too acid	0.68				
17A:						
Keomah--------------	Fair		Poor		Fair	
	Low content of organic matter	0.02	Low strength	0.00	Depth to saturated zone	0.04
	Too clayey	0.08	Depth to saturated zone	0.04	Too clayey	0.05
	Water erosion	0.68	Shrink-swell	0.89		
	Too acid	0.74				
17B:						
Keomah--------------	Fair		Poor		Fair	
	Too clayey	0.08	Low strength	0.00	Depth to saturated zone	0.04
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Too clayey	0.05
	Water erosion	0.68	Shrink-swell	0.61		
	Too acid	0.74				
43A:						
Ipava---------------	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
			Shrink-swell	0.59		
43B:						
Ipava---------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.88	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.99	Shrink-swell	0.22		
43B2:						
Ipava---------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Water erosion	0.68	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Low content of organic matter	0.88	Shrink-swell	0.49		
45A:						
Denny---------------	Fair		Poor		Poor	
	Too clayey	0.02	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.01
	Water erosion	0.90	Shrink-swell	0.74		
	Too acid	0.95				
50A:						
Virden--------------	Fair		Poor		Poor	
	Too clayey	0.02	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.02
			Shrink-swell	0.35		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
51A:						
Muscatune-----------	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Depth to	0.14
	Too clayey	0.92	Depth to	0.14	saturated zone	
	Water erosion	0.99	saturated zone		Too clayey	0.67
			Shrink-swell	0.99		
51B2:						
Muscatune-----------	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Depth to	0.14
	Too clayey	0.92	Depth to	0.14	saturated zone	
	Too acid	0.97	saturated zone		Too clayey	0.72
			Shrink-swell	0.99		
61A:						
Atterberry----------	Fair		Poor		Fair	
	Low content of	0.18	Low strength	0.00	Depth to	0.04
	organic matter		Depth to	0.04	saturated zone	
	Too acid	0.54	saturated zone		Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.99	Too acid	0.98
	Too clayey	0.92				
68A:						
Sable---------------	Fair		Poor		Poor	
	Low content of	0.68	Depth to	0.00	Depth to	0.00
	organic matter		saturated zone		saturated zone	
	Too clayey	0.98	Low strength	0.00	Too clayey	0.98
	Water erosion	0.99	Shrink-swell	0.87		
86B, 86B2:						
Osco----------------	Fair		Poor		Fair	
	Low content of	0.50	Low strength	0.00	Too clayey	0.64
	organic matter		Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
86C2:						
Osco----------------	Fair		Poor		Fair	
	Low content of	0.12	Low strength	0.00	Too clayey	0.64
	organic matter		Shrink-swell	0.87		
	Water erosion	0.68				
	Too acid	0.84				
	Too clayey	0.98				
119C2:						
Elco----------------	Fair		Poor		Fair	
	Low content of	0.02	Low strength	0.00	Too clayey	0.57
	organic matter		Shrink-swell	0.43	Depth to	0.98
	Water erosion	0.90	Depth to	0.98	saturated zone	
	Too clayey	0.98	saturated zone			
119D2:						
Elco----------------	Fair		Poor		Fair	
	Low content of	0.02	Low strength	0.00	Slope	0.04
	organic matter		Shrink-swell	0.38	Too clayey	0.57
	Water erosion	0.90	Depth to	0.98	Depth to	0.98
	Too clayey	0.98	saturated zone		saturated zone	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
119E2:						
Elco	Fair		Poor		Poor	
	Low content of organic matter	0.02	Low strength	0.00	Slope	0.00
	Water erosion	0.68	Slope	0.50	Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.87	Depth to saturated zone	0.98
			Depth to saturated zone	0.98		
249A:						
Edinburg	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.00
	Water erosion	0.99	Shrink-swell	0.17		
257A, 257B:						
Clarksdale	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Water erosion	0.90	Shrink-swell	0.50		
	Too acid	0.97				
259C2:						
Assumption	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
	Too acid	0.97	Shrink-swell	0.31	Depth to saturated zone	0.98
	Too clayey	0.98	Depth to saturated zone	0.98		
	Water erosion	0.99				
259D2:						
Assumption	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.97	Shrink-swell	0.38	Too clayey	0.64
	Too clayey	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Water erosion	0.99				
278A:						
Stronghurst	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.04
	Water erosion	0.90	Depth to saturated zone	0.04	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.97		
	Too clayey	0.98				
278B:						
Stronghurst	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.04
	Water erosion	0.90	Depth to saturated zone	0.04	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.96		
	Too clayey	0.98				
279B:						
Rozetta	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.92		
	Too acid	0.68				
	Too clayey	0.98				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
279C2:						
Rozetta	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Water erosion	0.68	Shrink-swell	0.93		
	Too acid	0.68				
	Too clayey	0.98				
279D2:						
Rozetta	Fair		Fair		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Slope	0.04
	Too acid	0.54	Shrink-swell	0.96	Too clayey	0.60
	Water erosion	0.90			Too acid	0.98
	Too clayey	0.98				
280D2:						
Fayette	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.68	Shrink-swell	0.87	Too clayey	0.57
	Water erosion	0.90				
	Too clayey	0.98				
280F:						
Fayette	Fair		Poor		Poor	
	Low content of organic matter	0.50	Low strength	0.00	Slope	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.64
	Too acid	0.68	Shrink-swell	0.87		
	Too clayey	0.98				
470C2:						
Keller	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.90	Depth to saturated zone	0.14	Too clayey	0.64
	Too acid	0.97	Shrink-swell	0.38		
	Too clayey	0.98				
549F, 549G:						
Marseilles	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
	Too acid	0.50	Low strength	0.00	Too clayey	0.39
	Too clayey	0.68	Slope	0.00	Too acid	0.88
	Depth to bedrock	0.90	Shrink-swell	0.87	Depth to bedrock	0.90
	Droughty	0.99				
	Water erosion	0.99				
605C2:						
Ursa	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Shrink-swell	0.56		
	Too acid	0.88				
605D2:						
Ursa	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.88	Shrink-swell	0.16	Slope	0.84
	Too acid	0.88				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
675B:						
Greenbush	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
			Shrink-swell	0.91		
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
699A:						
Timewell	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Too acid	0.54	Shrink-swell	0.55	Too acid	0.98
	Water erosion	0.99				
799D:						
Arents	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Slope	0.04
					Too clayey	0.58
	Water erosion	0.90				
	Too clayey	0.98				
802B:						
Orthents	Fair		Poor		Good	
	Low content of organic matter	0.68	Low strength	0.00		
			Shrink-swell	0.87		
	Water erosion	0.90				
802E:						
Orthents	Fair		Poor		Poor	
	Low content of organic matter	0.68	Low strength	0.00	Slope	0.00
			Slope	0.32		
	Water erosion	0.90	Shrink-swell	0.87		
824B:						
Swanwick	Fair		Poor		Poor	
	Low content of organic matter	0.50	Low strength	0.00	Hard to reclaim	0.00
			Shrink-swell	0.96	Rock fragments	0.50
	Too clayey	0.98			Too clayey	0.64
	Water erosion	0.99				
855A:						
Timewell	Fair		Fair		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Too acid	0.54	Shrink-swell	0.55	Too acid	0.98
	Water erosion	0.99				
Ipava	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.99	Shrink-swell	0.46		
872B:						
Rapatee	Fair		Poor		Poor	
	Low content of organic matter	0.75	Low strength	0.00	Hard to reclaim	0.00
			Shrink-swell	0.96	Too clayey	0.68
	Too clayey	0.98				
	Water erosion	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
1334A:						
Birds----------------	Fair		Poor		Poor	
	Water erosion	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.88	Low strength	0.00		
			Shrink-swell	0.99		
3074A:						
Radford-------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.68	Depth to saturated zone	0.14		
3107A:						
Sawmill-------------	Fair		Poor		Poor	
	Too clayey	0.98	Low strength	0.00	Depth to saturated zone	0.00
			Depth to saturated zone	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3284A:						
Tice----------------	Fair		Fair		Fair	
	Low content of organic matter	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too clayey	0.98	Low strength	0.22	Too clayey	0.64
			Shrink-swell	0.87		
3333A:						
Wakeland------------	Fair		Fair		Fair	
	Water erosion	0.37	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Low content of organic matter	0.50				
3334A:						
Birds----------------	Fair		Poor		Poor	
	Water erosion	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.88	Shrink-swell	0.99		
3451A:						
Lawson--------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.68	Depth to saturated zone	0.14		
9017A, 9017B:						
Keomah--------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.54	Shrink-swell	0.46	Too acid	0.98
	Water erosion	0.68				
9279B, 9279C2:						
Rozetta-------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Too acid	0.68	Shrink-swell	0.87		
	Water erosion	0.90				
	Too clayey	0.98				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
M-W. Miscellaneous water						
W. Water						

Table 17a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
6C2:						
Fishhook	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
6D2:						
Fishhook	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02				
7C3:						
Atlas	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.55		
7D3:						
Atlas	Somewhat limited		Very limited		Very limited	
	Slope	0.02	Depth to saturated zone	1.00	Slow refill	1.00
					Cutbanks cave	0.10
			Hard to pack	0.89		
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
	Slope	0.02				
8F:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.05	Depth to water	1.00
	Slope	0.36				
8G:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Piping	0.27	Depth to water	1.00
	Seepage	0.72				
16A:						
Rushville	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Cutbanks cave	0.50
					Slow refill	0.28
			Ponding	1.00		
			Piping	0.08		
17A, 17B:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.30		
43A, 43B, 43B2:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
45A:						
Denny	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.14		
50A:						
Virden	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
51A, 51B2:						
Muscatune	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Piping	0.18	Cutbanks cave	0.10
61A:						
Atterberry	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Piping	0.03	Cutbanks cave	0.10
68A:						
Sable	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
86B, 86B2:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
86C2:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
119C2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.03		
119D2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02	Piping	0.02		
119E2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.12	Piping	0.05		
249A:						
Edinburg	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.54	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.47		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
257A, 257B:						
Clarksdale----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.01		
259C2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.01		
259D2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	0.98
	Slope	0.02				
278A, 278B:						
Stronghurst---------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
279B, 279C2:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
279D2:						
Rozetta-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
	Slope	0.02				
280D2:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
	Slope	0.02				
280F:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Depth to water	1.00
	Slope	0.34				
470C2:						
Keller--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
549F:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.36	Thin layer	0.70	Depth to water	1.00
	Depth to bedrock	0.04				
549G:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Thin layer	0.70	Depth to water	1.00
	Depth to bedrock	0.04				
605C2, 605D2:						
Ursa----------------	Not limited		Not limited		Very limited	
					Depth to water	1.00
675B:						
Greenbush-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Depth to water	1.00

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
699A:						
Timewell	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
799D:						
Arents	Somewhat limited		Not limited		Very limited	
	Slope	0.02			Depth to water	1.00
802B:						
Orthents	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.50	Depth to water	1.00
802E:						
Orthents	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.15	Piping	0.50	Depth to water	1.00
	Seepage	0.04				
824B:						
Swanwick	Not limited		Very limited		Very limited	
			Thin layer	1.00	Depth to water	1.00
			Piping	0.02		
855A:						
Timewell	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	0.01		
872B:						
Rapatee	Somewhat limited		Not limited		Very limited	
	Seepage	0.02			Depth to water	1.00
1334A:						
Birds	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.97		
3074A:						
Radford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.40		
3107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
3284A:						
Tice	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.25		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3333A:						
Wakeland	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Piping	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
3334A:						
Birds	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.97		
3451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.75		
9017A:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.30	Depth to saturated zone	1.00	Slow refill	0.70
					Cutbanks cave	0.10
9017B:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
9279B, 9279C2:						
Rozetta	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
M-W.						
Miscellaneous water						
W.						
Water						

Table 17b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6C2:						
Fishhook	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.99		
6D2:						
Fishhook	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
7C3:						
Atlas	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Slope	0.99	Cutbanks cave	0.10
			Water erosion	0.56	Too clayey	0.02
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Slope	0.96
			Water erosion	0.56	Cutbanks cave	0.10
					Too clayey	0.02
8D2:						
Hickory	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Slope	1.00	Slope	0.96
			Water erosion	0.89	Cutbanks cave	0.10
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Water erosion	0.89	Cutbanks cave	0.10
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Cutbanks cave	0.10
16A:						
Rushville	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.50
17A:						
Keomah	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
17B:						
Keomah	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
43A:						
Ipava	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
43B, 43B2:						
Ipava	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
45A:						
Denny	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
50A:						
Virden	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
51A:						
Muscatune	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
51B2:						
Muscatune	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
61A:						
Atterberry	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
68A:						
Sable	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
86B, 86B2:						
Osco----------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.25	Cutbanks cave	0.10
86C2:						
Osco----------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.99	Cutbanks cave	0.10
119C2:						
Elco----------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.99		
119D2:						
Elco----------------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.99
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
119E2:						
Elco----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Cutbanks cave	0.10
249A:						
Edinburg------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
257A:						
Clarksdale----------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
257B:						
Clarksdale----------	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
259C2:						
Assumption----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.99		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
259D2:						
Assumption----------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.99
			Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
278A:						
Stronghurst---------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
278B:						
Stronghurst---------	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
279B:						
Rozetta-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.25	Cutbanks cave	0.10
279C2:						
Rozetta-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.99	Cutbanks cave	0.10
279D2:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
			Slope	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
280D2:						
Fayette-------------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
280F:						
Fayette-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Cutbanks cave	0.10
470C2:						
Keller--------------	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.99		
549F, 549G:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Depth to soft bedrock	0.10	Slope	1.00	Cutbanks cave	0.10
			Depth to soft bedrock	0.10	Depth to soft bedrock	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
605C2:						
Ursa	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.99	Slope	0.99	Depth to saturated zone	0.15
			Water erosion	0.89	Cutbanks cave	0.10
					Too clayey	0.01
605D2:						
Ursa	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Slope	1.00	Slope	0.16
			Water erosion	0.89	Depth to saturated zone	0.15
					Cutbanks cave	0.10
					Too clayey	0.01
675B:						
Greenbush	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.25	Cutbanks cave	0.10
699A:						
Timewell	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
799D:						
Arents	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
			Slope	1.00	Depth to saturated zone	0.16
					Cutbanks cave	0.10
802B:						
Orthents	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Cutbanks cave	0.10
			Slope	0.36		
802E:						
Orthents	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Cutbanks cave	0.10
824B:						
Swanwick	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.47
			Slope	0.25	Cutbanks cave	0.10
855A:						
Timewell	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
Ipava	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
872B:						
Rapatee	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to dense layer	0.50
			Slope	0.25	Cutbanks cave	0.10
1334A:						
Birds	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3074A:						
Radford	Not limited		Very limited		Very limited	
			Water erosion	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3107A:						
Sawmill	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.56	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3284A:						
Tice	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3333A:						
Wakeland	Not limited		Very limited		Very limited	
			Water erosion	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Slope	0.04	Cutbanks cave	0.10
3334A:						
Birds	Not limited		Very limited		Very limited	
			Water erosion	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3451A:						
Lawson	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Water erosion	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
9017A:						
Keomah	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9017B:						
Keomah	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Slope	0.25		
9279B:						
Rozetta	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.25	Cutbanks cave	0.10
9279C2:						
Rozetta	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.15
			Slope	0.99	Cutbanks cave	0.10
M-W.						
Miscellaneous water						
W.						
Water						

Table 18.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated. The representative values for USDA texture and Unified and AASHTO classifications are designated with an asterisk. Representative values are indicative of conditions that occur most commonly)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
6C2:												
Fishhook--------	0-6	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	6-27	Silty clay loam*	CL*, ML	A-7*, A-6	0	0	100	100	95-100	90-100	35-50	10-25
	27-58	Clay loam*, clay, silty clay loam	CL*, CH	A-7*	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	58-80	Clay loam*, clay, silty clay loam	CL*, CH	A-7*	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
6D2:												
Fishhook--------	0-5	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	5-22	Silty clay loam*	CL*, ML	A-7*, A-6	0	0	100	100	95-100	90-100	35-50	10-25
	22-68	Clay loam*, clay, silty clay loam	CL*, CH	A-7*	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
	68-82	Clay loam*, clay, silty clay loam	CL*, CH	A-7*	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35
7C3:												
Atlas-----------	0-4	Silty clay loam*	CH*, CL	A-7-6*, A-6	0	0	100	100	95-100	75-100	45-65	25-40
	4-34	Silty clay*, silty clay loam, clay, clay loam	CH*	A-7-6*, A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	34-77	Clay loam*, silty clay, silty clay loam, clay	CL*, CH	A-7-6*, A-7, A-6	0	0	95-100	90-100	80-100	60-95	35-55	20-30
7D3:												
Atlas-----------	0-4	Silty clay loam*	CH*, CL	A-7-6*, A-6	0	0	100	100	95-100	75-100	45-65	25-40
	4-66	Silty clay*, silty clay loam, clay, clay loam	CH*	A-7-6*, A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	66-80	Clay loam*, clay, loam	CL*, CH	A-7-6*, A-6, A-7	0	0	95-100	90-100	80-100	60-95	35-55	20-30

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8D2:												
Hickory---------	0-6	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	6-51	Clay loam*, silty clay loam, gravelly clay loam	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-80	30-50	15-30
	51-60	Loam*, clay loam, gravelly clay loam	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8F:												
Hickory---------	0-12	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-53	Clay loam*, silty clay loam, gravelly clay loam	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	53-58	Loam*, sandy loam, gravelly clay loam	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam*, sandy loam, gravelly clay loam	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8G:												
Hickory---------	0-4	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	4-12	Loam*	CL*, ML, CL-ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-40	Clay loam*, silty clay loam, gravelly clay loam	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	40-58	Loam*, gravelly clay loam	CL*, CL-ML, SC, SC-SM	A-6*, A-2, A-4	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam*, sandy loam, gravelly clay loam	CL-ML*, CL, SC, SC-SM	A-6*, A-2, A-4	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
16A:												
Rushville-------	0-7	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	NP-15
	7-13	Silt loam*, silt	CL*, CL-ML, ML	A-6*, A-4	0	0	100	100	95-100	95-100	20-40	NP-15
	13-32	Silty clay loam*, silty clay	CH*, CL	A-7-6*	0	0	100	100	95-100	95-100	45-60	20-35
	32-50	Silty clay loam*, silty clay	CL*, CH, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	45-60	15-30
	50-80	Silt loam*, silty clay loam	CL*	A-4*, A-6, A-7-6	0	0	100	100	95-100	90-100	30-45	8-20
17A:												
Keomah----------	0-11	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-15
	11-18	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-20
	18-33	Silty clay loam*, silty clay	CL*, CH	A-7-6*	0	0	100	100	100	95-100	45-55	25-30
	33-51	Silty clay loam*	CL*, ML	A-7-6*, A-6	0	0	100	100	100	95-100	35-45	15-25
	51-89	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	100	95-100	25-35	5-15
17B:												
Keomah----------	0-7	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-15
	7-11	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-20
	11-31	Silty clay loam*, silty clay	CL*, CH	A-7-6*, A-7	0	0	100	100	100	95-100	45-55	25-30
	31-80	Silty clay loam*, silt loam	CL*	A-7-6*, A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
43A:												
Ipava-----------	0-20	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	20-40	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	40-60	Silt loam*, silty clay loam	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
43B:												
Ipava-----------	0-17	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	17-58	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	58-60	Silt loam*, silty clay loam	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
43B2:												
Ipava-----------	0-8	Silt loam*	CL*	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	8-35	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	35-60	Silt loam*, silty clay loam	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
45A:												
Denny-----------	0-9	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	30-40	8-15
	9-22	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	22-45	Silty clay loam*, silty clay	CH*, CL	A-7-6*, A-6	0	0	100	100	95-100	95-100	35-60	15-35
	45-60	Silty clay loam*, silt loam	CL*	A-6*	0	0	100	100	95-100	95-100	25-40	11-20
50A:												
Virden----------	0-16	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	30-50	10-25
	16-49	Silty clay loam*, silty clay	CH*, CL	A-7-6*	0	0	100	100	95-100	95-100	40-60	20-40
	49-60	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	95-100	90-100	30-50	10-25
51A:												
Muscatune-------	0-16	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	16-22	Silty clay loam*, silt loam	CL*, ML	A-6*	0	0	100	100	97-100	95-100	35-40	14-20
	22-46	Silty clay loam*	CL*, ML	A-7-6*, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-60	Silt loam*, silty clay loam	CL*, ML	A-6*, A-4	0	0	100	100	96-100	93-100	24-37	7-18
51B2:												
Muscatune-------	0-9	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	9-37	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	97-100	95-100	35-46	14-24
	37-60	Silt loam*, silty clay loam	CL*, ML	A-6*, A-4	0	0	100	100	96-100	93-100	24-37	7-18
61A:												
Atterberry------	0-9	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-37	6-16
	9-17	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-37	7-18
	17-48	Silty clay loam*, silt loam	CL*, ML	A-7-6*, A-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-37	7-18

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
68A:												
Sable-----------	0-17	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	17-23	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	23-60	Silty clay loam*, silt loam	CL*, CH	A-7-6*	0	0	100	100	95-100	95-100	40-55	20-35
86B:												
Osco------------	0-14	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam*, silty clay loam	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-25
86B2:												
Osco------------	0-8	Silt loam*	CL*, ML	A-6*	0	0	100	100	97-100	95-100	29-37	10-16
	8-42	Silty clay loam*, silt loam	CL*, ML	A-7-6*, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	42-51	Silt loam*, silty clay loam	CL*, ML	A-6*, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	51-60	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	96-100	93-100	24-37	7-18
86C2:												
Osco------------	0-9	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	95-100	35-45	10-20
	9-34	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	40-50	15-25
	34-60	Silt loam*, silty clay loam	CL*, ML	A-6*, A-4	0	0	100	100	95-100	95-100	35-45	15-25
119C2:												
Elco------------	0-8	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	8-31	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	95-100	85-100	25-45	10-30
	31-60	Silty clay loam*, loam, clay	CL*	A-7*, A-6	0	0	100	90-100	80-100	60-95	25-50	10-30
119D2:												
Elco------------	0-6	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	25-40	5-15
	6-28	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	95-100	85-100	25-45	10-30
	28-60	Silty clay loam*, loam, clay	CL*	A-7*, A-6	0	0	100	90-100	80-100	60-95	25-50	10-30

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
119E2:												
Elco------------	0-2	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	2-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	9-32	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	95-100	85-100	25-45	10-30
	32-60	Silty clay loam*, clay loam, clay	CL*	A-7*, A-6	0	0	100	90-100	85-95	75-95	25-45	10-30
249A:												
Edinburg--------	0-16	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	90-100	35-50	16-25
	16-55	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-45
	55-60	Silt loam*, silty clay loam	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	35-45	15-20
257A:												
Clarksdale------	0-8	Silt loam*	CL*	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	8-16	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	20-35	8-18
	16-47	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	40-65	25-40
	47-67	Silt loam*, silty clay loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	25-45	10-25
	67-80	Silt loam*	CL*	A-6*	0	0	95-100	95-100	95-100	90-100	25-40	10-20
257B:												
Clarksdale------	0-9	Silt loam*	CL*	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	9-29	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	40-65	25-40
	29-50	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	25-45	10-25
	50-80	Silt loam*	CL*	A-6*	0	0	95-100	95-100	95-100	90-100	25-40	10-20
259C2:												
Assumption------	0-8	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	8-20
	8-24	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	30-50	10-30
	24-60	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0-5	100	95-100	90-100	70-90	35-50	10-30
259D2:												
Assumption------	0-7	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	8-20
	7-28	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	30-50	10-30
	28-60	Silty clay loam*, clay loam, clay	CL*	A-6*, A-7	0	0-5	100	95-100	90-100	70-90	35-50	20-35

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
278A:												
Stronghurst-----	0-8	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	8-47	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	40-55	20-35
	47-60	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	25-40	5-20
278B:												
Stronghurst-----	0-10	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	25-35	5-15
	10-48	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	40-55	20-35
	48-60	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	25-40	5-20
279B:												
Rozetta---------	0-7	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
279C2:												
Rozetta---------	0-8	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	8-56	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	56-80	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
279D2:												
Rozetta---------	0-6	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	6-49	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	49-60	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
280D2:												
Fayette---------	0-6	Silt loam*	CL*	A-6*, A-7	0	0	100	100	100	95-100	30-45	10-25
	6-48	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	48-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
280F:												
Fayette---------	0-3	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	3-10	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	10-45	Silty clay loam*, silt loam	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	45-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
470C2:												
Keller----------	0-9	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	99-100	95-100	35-45	13-18
	9-28	Silty clay loam*, silt loam	CL*, ML	A-7-6*, A-6, A-7	0	0	100	100	98-100	94-100	35-47	17-25
	28-60	Clay loam*, silty clay loam, clay	CL*, CH	A-7-6*, A-6, A-7	0	0-5	94-100	84-100	77-98	61-86	41-56	21-33
	60-80	Clay loam*, silty clay loam, clay	CL*, CH	A-7-6*, A-6	0	0-5	94-100	84-100	77-98	61-86	41-56	21-33
549F:												
Marseilles------	0-10	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Silty clay loam*, silty clay, silty clay loam	CL*, CH	A-7-6*, A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock*	---	---	---	---	---	---	---	---	---	---
549G:												
Marseilles------	0-10	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Silty clay loam*, clay loam, silty clay	CL*, CH	A-7-6*	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock*	---	---	---	---	---	---	---	---	---	---
605C2:												
Ursa------------	0-7	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	94-100	88-100	74-96	27-43	9-18
	7-31	Clay loam*, clay, silty clay loam	CH*, CL	A-7-6*	0	0-5	95-100	88-97	79-94	60-85	46-57	25-33
	31-60	Clay loam*, loam, clay	CL*, CH	A-7-6*, A-6	0-2	0-5	95-98	83-97	74-93	54-84	35-55	17-32
605D2:												
Ursa------------	0-6	Loam*	CL*, ML, CL-ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	6-56	Silty clay*, clay loam, clay, silty clay loam	CH*, CL	A-7-6*, A-7	0	0-5	95-100	88-97	79-94	60-85	46-57	25-33
	56-80	Clay loam*, loam, clay	CL*, CH	A-7-6*, A-6, A-7	0-2	0-5	95-98	83-97	74-93	54-84	35-55	17-32
675B:												
Greenbush-------	0-14	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	100	95-100	25-35	5-15
	14-60	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0	100	100	100	95-100	35-45	15-25
	60-80	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	11-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
699A:												
Timewell--------	0-18	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	90-100	30-40	5-15
	18-40	Silty clay loam*, silty clay	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-60	25-40
	40-67	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	35-50	20-35
	67-80	Silt loam*	CL*	A-6*	0	0	100	100	90-100	80-100	30-40	10-20
799D:												
Arents----------	0-9	Silt loam*	CL*, ML	A-6*, A-4, A-7	0	0	100	100	95-100	90-100	28-41	12-19
	9-60	Silty clay loam*, silt loam, loam	CL*, CL-ML, ML	A-6*, A-4, A-7	0	0	95-100	90-100	90-100	85-95	25-44	9-25
802B, 802E:												
Orthents--------	0-6	Loam*	CL*	A-6*	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	6-60	Loam*, silt loam, clay loam	CL*	A-6*	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20
824B:												
Swanwick--------	0-7	Silt loam*	CL*, ML	A-6*, A-7	0	0	95-100	88-100	88-100	85-100	31-39	14-19
	7-20	Silty clay loam*, silt loam, loam	CL*, CL-ML, ML	A-6*, A-4, A-7	0	0	90-100	80-100	80-100	80-95	24-45	9-25
	20-60	Silty clay loam*, clay loam	CL*, ML	A-7-6*, A-6	0	0	88-100	75-100	70-100	65-95	37-47	19-25
855A:												
Timewell--------	0-18	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	90-100	30-40	5-15
	18-40	Silty clay loam*, silty clay	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-60	25-40
	40-67	Silty clay loam*, silt loam	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	35-50	20-35
	67-80	Silt loam*	CL*	A-6*	0	0	100	100	90-100	80-100	30-40	10-20
Ipava-----------	0-14	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	14-41	Silty clay loam*, silty clay	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	41-80	Silt loam*, silty clay loam	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
872B:												
Rapatee---------	0-3	Silty clay loam*	CL*, ML	A-7-6*, A-4, A-6	0	0	100	100	95-100	90-100	39-47	16-18
	3-48	Silty clay loam*, silt loam	CL*, CL-ML, ML	A-7-6*, A-4, A-6	0	0-10	90-100	75-100	70-100	65-95	26-45	10-25
	48-60	Clay loam*, silty clay loam, loam	CL*, CL-ML, ML	A-6*, A-4	0	0-15	90-100	65-90	60-90	55-80	24-43	9-25
1334A:												
Birds-----------	0-9	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	90-100	85-100	25-35	5-15
	9-37	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	90-100	85-95	25-40	8-20
	37-60	Silt loam*, stratified sandy loam to loam to silt loam to clay loam to silty clay loam	CL*, CL-ML, SC	A-4*, A-6	0	0	100	100	65-95	35-85	25-35	5-12
3074A:												
Radford---------	0-12	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	12-33	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	33-60	Silty clay loam*, silt loam, clay loam	CL*	A-6*, A-7	0	0	100	100	85-100	70-95	35-50	15-25
3107A:												
Sawmill---------	0-26	Silty clay loam*	CL*	A-6*, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	26-54	Silty clay loam*	CL*	A-6*, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	54-60	Silty clay loam*, clay loam, loam	CL*	A-6*, A-4, A-7	0	0	100	100	85-100	70-95	25-50	8-25
3284A:												
Tice------------	0-14	Silty clay loam*	CL*	A-6*, A-7	0	0	100	100	90-100	80-95	30-45	10-20
	14-39	Silty clay loam*, silt loam	CL*, CH	A-7*	0	0	100	100	95-100	85-95	40-55	15-30
	39-72	Stratified silt loam to loam*	CL-ML*, CL	A-4*, A-6, A-7	0	0	100	100	60-95	55-80	25-45	5-20
3333A:												
Wakeland--------	0-10	Silt loam*	ML*, CL, CL-ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	10-50	Silt loam*	ML*, CL, CL-ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	50-80	Silt loam*, loam	ML*, CL, CL-ML	A-4*	0	0	100	100	85-100	60-100	16-28	3-9

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
3334A:												
Birds-----------	0-9	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	90-100	85-100	25-35	5-15
	9-37	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	90-100	85-95	25-40	8-20
	37-60	Stratified silt loam*	CL*, CL-ML, SC	A-4*, A-6	0	0	100	100	65-95	35-85	25-35	5-12
3451A:												
Lawson----------	0-14	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	90-100	85-100	20-35	5-15
	14-33	Silt loam*, silty clay loam	CL*, CL-ML	A-4*	0	0	100	100	90-100	85-100	20-40	5-20
	33-80	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	90-100	60-100	30-40	10-20
9017A:												
Keomah----------	0-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	9-16	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	4-15
	16-49	Silty clay loam*, silty clay	CH*	A-7*	0	0	100	100	100	95-100	45-60	30-45
	49-80	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0	100	100	100	95-100	35-50	15-30
9017B:												
Keomah----------	0-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	9-16	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	4-15
	16-49	Silty clay loam*, silty clay	CH*	A-7*	0	0	100	100	100	95-100	45-60	30-45
	49-80	Silty clay loam*, silt loam	CL*	A-6*, A-7	0	0	100	100	100	95-100	35-50	15-30
9279B:												
Rozetta---------	0-9	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	9-66	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	66-76	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
9279C2:												
Rozetta---------	0-7	Silt loam*	CL*	A-4*, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-66	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	66-70	Silt loam*, silty clay loam	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
M-W. Miscellaneous water												

Table 18.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
W. Water												

Table 19.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
6C2:												
Fishhook------------	0-6	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	6-27	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	27-58	35-45	1.55-1.75	0.06-0.6	0.09-0.16	6.0-8.9	0.0-0.5	.28	.28			
	58-80	35-45	1.55-1.75	0.06-0.6	0.09-0.16	6.0-8.9	0.0-0.3	.28	.28			
6D2:												
Fishhook------------	0-5	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	5-22	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	22-68	35-45	1.55-1.75	0.06-0.2	0.09-0.16	6.0-8.9	0.0-0.5	.28	.28			
	68-82	35-45	1.55-1.75	0.06-0.2	0.09-0.16	6.0-8.9	0.0-0.3	.28	.28			
7C3:												
Atlas---------------	0-4	30-40	1.35-1.55	0.06-0.2	0.14-0.19	6.0-8.9	0.5-1.0	.37	.37	2	7	38
	4-34	38-45	1.35-1.55	0.001-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	34-77	25-45	1.35-1.55	0.06-0.2	0.07-0.18	3.0-5.9	0.0-1.0	.37	.37			
7D3:												
Atlas---------------	0-4	30-40	1.35-1.55	0.06-0.2	0.14-0.19	6.0-8.9	0.5-1.0	.37	.37	2	7	38
	4-66	38-45	1.35-1.55	0.001-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.32	.32			
	66-80	25-45	1.35-1.60	0.06-0.2	0.07-0.18	3.0-5.9	0.0-1.0	.37	.37			
8D2:												
Hickory-------------	0-6	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-51	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	51-60	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.2	.28	.32			
8F:												
Hickory-------------	0-12	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-53	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	53-58	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
8G:												
Hickory-------------	0-4	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-22	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
	12-40	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	40-58	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
16A:												
Rushville-----------	0-7	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-13	10-22	1.30-1.50	0.06-0.2	0.15-0.20	0.0-2.9	0.0-1.0	.55	.55			
	13-32	35-48	1.30-1.50	0.01-0.06	0.09-0.20	6.0-8.9	0.0-0.5	.37	.37			
	32-50	30-42	1.40-1.60	0.01-0.2	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	50-80	18-30	1.40-1.55	0.06-0.6	0.16-0.21	0.0-2.9	0.0-0.5	.49	.49			
17A:												
Keomah--------------	0-11	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	11-18	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	18-33	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.1-0.5	.37	.37			
	33-51	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	51-89	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
17B:												
Keomah--------------	0-7	16-26	1.30-1.40	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	11-31	35-42	1.30-1.40	0.06-0.6	0.15-0.19	6.0-8.9	0.0-0.5	.37	.37			
	31-80	24-38	1.40-1.60	0.2-2	0.16-0.22	0.0-5.9	0.0-0.5	.43	.43			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
43A:												
Ipava---------------	0-20	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	20-40	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	40-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
43B:												
Ipava---------------	0-17	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	17-58	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	58-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
43B2:												
Ipava---------------	0-8	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-35	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	35-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
45A:												
Denny---------------	0-9	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	9-22	15-22	1.25-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-45	35-45	1.20-1.40	0.06-0.2	0.11-0.22	6.0-8.9	0.0-1.0	.37	.37			
	45-60	25-35	1.40-1.60	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.2	.43	.43			
50A:												
Virden--------------	0-16	27-35	1.20-1.40	0.6-2	0.21-0.24	3.0-5.9	3.0-6.0	.24	.24	5	7	38
	16-49	35-42	1.20-1.45	0.2-0.6	0.11-0.20	6.0-8.9	0.0-2.0	.37	.37			
	49-60	25-33	1.25-1.55	0.2-0.6	0.18-0.22	3.0-5.9	0.0-0.5	.43	.43			
51A:												
Muscatune-----------	0-16	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-22	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	22-46	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	46-60	15-30	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.2	.49	.49			
51B2:												
Muscatune-----------	0-9	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-37	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	37-60	15-30	1.35-1.60	0.6-2	0.19-0.26	0.0-5.9	0.0-0.2	.49	.49			
61A:												
Atterberry----------	0-9	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-17	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	17-48	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
68A:												
Sable---------------	0-17	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	7	38
	17-23	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.24	.24			
	23-60	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
86B:												
Osco----------------	0-14	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86B2:												
Osco----------------	0-8	20-26	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-42	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.0-1.0	.37	.37			
	42-51	15-30	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	0.0-0.5	.49	.49			
	51-60	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
86C2:												
Osco----------------	0-9	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	9-34	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
119C2:												
Elco	0-8	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-31	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
119D2:												
Elco	0-6	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-28	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
119E2:												
Elco	0-2	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	2-9	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	0.0-0.5	.49	.49			
	9-32	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	32-60	25-45	1.40-1.60	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.2	.28	.28			
249A:												
Edinburg	0-16	27-35	1.10-1.30	0.6-2	0.21-0.24	6.0-8.9	3.0-6.0	.24	.24	3	7	38
	16-55	35-46	1.20-1.40	0.06-0.2	0.13-0.20	6.0-8.9	0.2-1.0	.37	.37			
	55-60	22-30	1.30-1.50	0.2-2	0.18-0.22	3.0-5.9	0.0-0.2	.49	.49			
257A:												
Clarksdale	0-8	20-27	1.30-1.50	0.6-2	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-16	15-27	1.25-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	16-47	35-45	1.30-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	47-67	20-30	1.40-1.60	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	67-80	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
257B:												
Clarksdale	0-9	20-27	1.30-1.50	0.6-2	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	9-29	35-45	1.30-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	29-50	20-30	1.40-1.60	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	50-80	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
259C2:												
Assumption	0-8	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	8-24	25-35	1.20-1.40	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	24-60	25-45	1.40-1.60	0.06-0.6	0.16-0.20	3.0-8.9	0.0-0.5	.28	.28			
259D2:												
Assumption	0-7	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-28	25-35	1.20-1.40	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	28-60	30-45	1.45-1.65	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.5	.28	.28			
278A:												
Stronghurst	0-8	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-47	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	47-60	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
278B:												
Stronghurst	0-10	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-48	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	48-60	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279B:												
Rozetta	0-7	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-55	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	55-60	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
279C2:												
Rozetta-------------	0-8	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-56	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	56-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279D2:												
Rozetta-------------	0-6	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	6-49	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	49-60	20-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
280D2:												
Fayette-------------	0-6	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	6-48	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280F:												
Fayette-------------	0-3	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.43	.43	5	6	48
	3-10	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	10-45	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
470C2:												
Keller--------------	0-9	20-27	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	4	6	48
	9-28	25-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.43	.43			
	28-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
	60-80	30-45	1.50-1.70	0.06-0.2	0.10-0.19	6.0-8.9	0.0-0.2	.28	.28			
549F:												
Marseilles----------	0-10	20-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.2	0.09-0.20	3.0-6.0	0.0-0.5	.37	.37			
	35-60	---	---	0.0015-0.2	---	---	---	---	---			
549G:												
Marseilles----------	0-10	20-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.2	0.09-0.20	3.0-6.0	0.0-0.5	.37	.37			
	35-60	---	---	0.0015-0.2	---	---	---	---	---			
605C2:												
Ursa----------------	0-7	15-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	7-31	35-45	1.50-1.70	0.06-0.2	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	31-60	25-45	1.55-1.75	0.06-0.2	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
605D2:												
Ursa----------------	0-6	15-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	6-56	35-45	1.50-1.70	0.06-0.2	0.09-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-80	25-45	1.55-1.75	0.06-0.2	0.08-0.17	3.0-5.9	0.0-0.5	.28	.28			
675B:												
Greenbush-----------	0-14	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	14-60	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	60-80	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
699A:												
Timewell------------	0-18	20-27	1.15-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	18-40	35-42	1.20-1.40	0.2-0.6	0.12-0.17	6.0-8.9	0.0-1.0	.37	.37			
	40-67	25-40	1.20-1.40	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	67-80	20-30	1.30-1.50	0.2-0.6	0.16-0.21	3.0-5.9	0.0-0.5	.49	.49			
799D:												
Arents--------------	0-9	18-27	1.30-1.60	0.2-0.6	0.20-0.22	0.0-2.9	0.5-2.0	.32	.32	5	6	48
	9-60	15-35	1.50-1.70	0.06-0.2	0.08-0.12	0.0-2.9	0.1-0.5	.43	.43			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
802B, 802E:												
Orthents	0-6	22-30	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	6-60	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.2-1.0	.43	.43			
824B:												
Swanwick	0-7	21-27	1.25-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.32	.37	4	7	38
	7-20	15-35	1.50-1.70	0.06-0.2	0.08-0.12	0.0-2.9	0.0-1.0	.37	.43			
	20-60	27-35	1.60-1.90	0.01-0.06	0.05-0.12	3.0-5.9	0.0-1.0	.37	.43			
855A:												
Timewell	0-18	20-27	1.15-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	18-40	35-42	1.20-1.40	0.2-0.6	0.12-0.17	6.0-8.9	0.0-1.0	.37	.37			
	40-67	25-40	1.20-1.40	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.5	.37	.37			
	67-80	20-30	1.30-1.50	0.2-0.6	0.16-0.21	3.0-5.9	0.0-0.5	.49	.49			
Ipava	0-14	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	14-41	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	41-80	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
872B:												
Rapatee	0-3	24-35	1.25-1.60	0.2-0.6	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	3-48	15-35	1.50-1.90	0.06-0.6	0.08-0.15	3.0-5.9	0.0-2.5	.37	.43			
	48-60	15-35	1.55-2.20	0.0015-0.06	0.03-0.18	0.0-2.9	0.0-0.8	.37	.43			
1334A:												
Birds	0-9	15-27	1.35-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-37	18-30	1.35-1.45	0.6-2	0.20-0.24	3.0-5.9	0.5-1.0	.49	.49			
	37-60	15-27	1.35-1.45	0.6-2	0.12-0.20	0.0-2.9	0.5-1.0	.49	.49			
3074A:												
Radford	0-12	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	12-33	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-2.0	.49	.49			
	33-60	24-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
3107A:												
Sawmill	0-26	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	4.0-5.0	.28	.28	5	7	38
	26-54	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32			
	54-60	25-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	0.0-2.0	.32	.32			
3284A:												
Tice	0-14	27-35	1.25-1.45	0.6-2	0.21-0.24	3.0-5.9	2.0-3.0	.32	.32	5	7	38
	14-39	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	39-72	15-30	1.40-1.60	0.6-2	0.11-0.18	3.0-5.9	0.0-1.0	.32	.32			
3333A:												
Wakeland	0-10	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	10-50	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.0-1.0	.55	.55			
	50-80	10-18	1.30-1.50	0.6-2	0.18-0.24	0.0-2.9	0.0-0.5	.55	.55			
3334A:												
Birds	0-9	15-27	1.35-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-37	18-30	1.35-1.45	0.6-2	0.20-0.24	3.0-5.9	0.5-1.0	.49	.49			
	37-60	15-27	1.35-1.45	0.6-2	0.12-0.20	0.0-2.9	0.5-1.0	.49	.49			
3451A:												
Lawson	0-14	10-27	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	14-33	10-30	1.20-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	33-80	18-30	1.55-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
9017A:												
Keomah--------------	0-9	16-26	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-16	16-26	1.35-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.2-1.0	.49	.49			
	16-49	35-42	1.30-1.45	0.06-0.6	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	49-80	24-38	1.40-1.55	0.2-2	0.18-0.20	3.0-5.9	0.0-0.5	.43	.43			
9017B:												
Keomah--------------	0-9	16-26	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-16	16-26	1.35-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.2-1.0	.49	.49			
	16-49	35-42	1.30-1.45	0.06-0.6	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	49-80	24-38	1.40-1.55	0.2-2	0.18-0.20	3.0-5.9	0.0-0.5	.43	.43			
9279B:												
Rozetta-------------	0-9	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-66	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	66-76	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
9279C2:												
Rozetta-------------	0-7	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-66	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	66-70	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
M-W.												
Miscellaneous water												
W.												
Water												

Table 20.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
6C2:				
Fishhook	0-6	5.1-7.3	14-22	0
	6-27	4.5-7.3	16-23	0
	27-58	4.5-7.8	21-29	0-25
	58-80	6.1-8.4	21-29	0-25
6D2:				
Fishhook	0-5	5.1-7.3	14-22	0
	5-22	4.5-7.3	16-23	0
	22-68	4.5-7.8	21-29	0-25
	68-82	6.1-8.4	21-29	0-25
7C3:				
Atlas	0-4	4.5-7.3	19-26	0
	4-34	4.5-7.3	21-29	0
	34-77	4.5-7.8	18-29	0-25
7D3:				
Atlas	0-4	4.5-7.3	19-26	0
	4-66	4.5-7.8	18-29	0-25
	66-80	6.1-7.8	12-20	0-25
8D2:				
Hickory	0-6	4.5-7.3	14-19	0
	6-51	4.5-7.3	16-22	0
	51-60	5.1-8.4	9.0-19	0-25
8F:				
Hickory	0-12	4.5-7.3	14-19	0
	12-53	4.5-7.3	16-22	0
	53-58	5.1-7.8	9.0-19	0-15
	58-63	5.6-8.4	5.0-15	0-25
8G:				
Hickory	0-4	4.5-7.3	14-19	0
	4-12	4.5-7.3	9.0-14	0
	12-40	4.5-7.3	16-22	0
	40-58	5.1-7.8	9.0-19	0-15
	58-63	5.6-8.4	5.0-15	0-25
16A:				
Rushville	0-7	4.5-7.3	4.0-17	0
	7-13	4.5-7.3	3.0-13	0
	13-32	4.5-6.5	20-33	0
	32-50	4.5-7.8	18-30	0
	50-80	5.6-8.4	10-20	0-15
17A:				
Keomah	0-11	5.1-7.3	10-26	0
	11-18	5.1-7.3	9.0-24	0
	18-33	5.1-6.5	28-41	0
	33-51	5.6-7.3	16-29	0
	51-89	6.1-7.3	8.0-18	0-15
17B:				
Keomah	0-7	5.1-7.3	10-26	0
	7-11	5.1-7.3	9.0-24	0
	11-31	5.1-6.5	28-41	0
	31-80	5.6-7.3	16-29	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
43A:				
Ipava-----------	0-20	5.6-7.3	20-27	0
	20-40	5.6-7.8	22-27	0
	40-60	6.1-8.4	12-19	0
43B:				
Ipava-----------	0-17	5.6-7.3	20-27	0
	17-58	5.6-7.8	22-27	0
	58-60	6.1-8.4	12-19	0
43B2:				
Ipava-----------	0-8	5.6-7.3	20-27	0
	8-35	5.6-7.8	22-27	0
	35-60	6.1-8.4	12-19	0
45A:				
Denny-----------	0-9	5.6-7.3	18-24	0
	9-22	5.6-6.5	9.0-15	0
	22-45	5.6-6.5	21-29	0
	45-60	5.6-7.8	15-21	0
50A:				
Virden----------	0-16	5.6-7.8	24-30	0
	16-49	5.6-7.8	21-27	0
	49-60	5.6-8.4	15-20	0-25
51A:				
Muscatune-------	0-16	6.1-7.3	16-32	0
	16-22	5.6-7.3	16-27	0
	22-46	5.6-7.3	17-31	0
	46-60	6.6-7.8	9.0-22	0-15
51B2:				
Muscatune-------	0-9	5.1-7.3	16-32	0
	9-37	5.1-7.3	16-27	0
	37-60	6.6-7.8	10-31	0-15
61A:				
Atterberry------	0-9	6.1-7.3	11-28	0
	9-17	5.6-6.5	9.0-24	0
	17-48	5.1-6.0	16-29	0
	48-60	5.6-7.3	9.0-23	0-8
68A:				
Sable-----------	0-17	5.6-7.3	26-33	0
	17-23	5.6-7.3	20-30	0
	23-60	5.6-7.8	15-23	0
86B:				
Osco------------	0-14	5.1-7.3	18-25	0
	14-55	5.1-6.5	15-23	0
	55-60	5.6-7.3	12-18	0-15
86B2:				
Osco------------	0-8	5.1-7.3	18-25	0
	8-42	5.1-6.5	15-23	0
	42-51	5.1-6.5	12-18	0
	51-60	5.6-7.8	12-18	0-15
86C2:				
Osco------------	0-9	5.1-7.3	18-25	0
	9-34	5.1-6.5	15-23	0
	34-60	5.6-7.3	12-18	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
119C2:				
Elco------------	0-8	5.6-7.3	14-22	0
	8-31	5.1-7.8	14-22	0
	31-60	5.1-7.8	15-27	0
119D2:				
Elco------------	0-6	5.6-7.3	14-22	0
	6-28	5.1-7.8	14-22	0
	28-60	5.1-7.8	15-27	0
119E2:				
Elco------------	0-2	5.6-7.3	14-22	0
	2-9	5.6-7.3	14-22	0
	9-32	5.1-7.8	14-22	0
	32-60	5.1-7.8	15-27	0
249A:				
Edinburg--------	0-16	5.6-7.8	22-29	0
	16-55	5.6-7.3	21-28	0
	55-60	6.6-7.8	13-18	0-5
257A:				
Clarksdale------	0-8	5.1-7.3	10-22	0
	8-16	5.1-7.3	9.0-18	0
	16-47	5.1-7.3	21-28	0
	47-67	6.1-8.4	12-19	0-15
	67-80	6.1-8.4	12-18	0-15
257B:				
Clarksdale------	0-9	5.1-7.3	10-22	0
	9-29	5.1-7.3	21-28	0
	29-50	6.1-8.4	12-19	0-15
	50-80	6.1-8.4	12-18	0-15
259C2:				
Assumption------	0-8	5.6-7.3	18-24	0
	8-24	5.1-7.3	15-23	0
	24-60	5.1-7.3	15-22	0
259D2:				
Assumption------	0-7	5.6-7.3	18-24	0
	7-28	5.1-7.3	15-23	0
	28-60	5.1-7.3	18-28	0
278A:				
Stronghurst-----	0-8	5.1-7.3	14-22	0
	8-47	5.1-7.3	17-23	0
	47-60	5.6-7.8	12-17	0-15
278B:				
Stronghurst-----	0-10	5.1-7.3	14-22	0
	10-48	5.1-7.3	17-23	0
	48-60	5.6-7.8	12-17	0-15
279B:				
Rozetta---------	0-7	5.1-7.3	10-22	0
	7-11	4.5-7.3	7.0-17	0
	11-55	4.5-6.0	16-22	0
	55-60	5.6-7.8	12-17	0-15
279C2:				
Rozetta---------	0-8	5.1-7.3	10-22	0
	8-56	4.5-6.0	16-22	0
	56-80	5.6-7.8	12-17	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
279D2:				
Rozetta---------	0-6	5.1-7.3	10-22	0
	6-49	4.5-6.0	---	0
	49-60	5.6-7.8	12-17	0-15
280D2:				
Fayette---------	0-6	5.1-7.3	18-25	0
	6-48	4.5-6.0	15-20	0
	48-60	5.1-7.8	15-20	0-15
280F:				
Fayette---------	0-3	5.1-7.3	18-25	0
	3-10	4.5-7.3	7.0-17	0
	10-45	4.5-6.0	15-20	0
	45-60	5.1-7.8	15-20	0-15
470C2:				
Keller----------	0-9	5.6-7.8	18-26	0
	9-28	5.1-7.3	16-22	0
	28-60	5.1-7.8	18-25	0
	60-80	5.1-7.8	18-25	0
549F:				
Marseilles------	0-10	5.1-6.5	14-22	0
	10-35	4.5-6.5	16-27	0
	35-60	---	---	---
549G:				
Marseilles------	0-10	5.1-6.5	14-22	0
	10-35	4.5-6.5	16-27	0
	35-60	---	---	---
605C2:				
Ursa------------	0-7	4.5-7.3	11-22	0
	7-31	4.5-7.3	21-27	0
	31-60	5.6-8.4	15-27	0-5
605D2:				
Ursa------------	0-6	4.5-7.3	11-22	0
	6-56	4.5-7.3	21-27	0
	56-80	5.6-8.4	15-27	0-5
675B:				
Greenbush-------	0-14	5.1-7.3	20-25	0
	14-60	4.5-7.3	25-30	0
	60-80	5.6-7.3	20-25	0
699A:				
Timewell--------	0-18	5.1-7.3	18-24	0
	18-40	4.5-6.0	21-25	0
	40-67	5.6-7.3	15-25	0
	67-80	5.6-8.4	12-18	0-10
799D:				
Arents----------	0-9	5.1-7.8	12-18	0
	9-60	4.5-8.4	9.0-22	0-20
802B, 802E:				
Orthents--------	0-6	5.6-7.8	10-25	0-10
	6-60	5.6-7.8	10-20	0-20

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
824B:				
Swanwick	0-7	5.1-7.8	16-22	0
	7-20	4.5-8.4	9.0-22	0-20
	20-60	4.5-8.4	16-22	0-20
855A:				
Timewell	0-18	5.1-7.3	18-24	0
	18-40	4.5-6.0	21-25	0
	40-67	5.6-7.3	15-25	0
	67-80	5.6-8.4	12-18	0-10
Ipava	0-14	5.6-7.3	20-27	0
	14-41	5.6-7.8	22-27	0
	41-80	5.6-8.4	12-19	0-20
872B:				
Rapatee	0-3	6.1-7.3	20-35	0-1
	3-48	6.6-8.4	10-30	0-15
	48-60	6.6-8.4	10-25	0-10
1334A:				
Birds	0-9	5.6-7.3	8.0-12	0
	9-37	5.6-7.8	8.0-14	0
	37-60	5.6-7.3	6.0-12	0
3074A:				
Radford	0-12	5.6-7.8	15-24	0
	12-33	6.1-7.8	11-20	0
	33-60	6.1-7.8	14-23	0-20
3107A:				
Sawmill	0-26	6.1-7.8	24-31	0
	26-54	6.1-7.8	17-27	0
	54-60	6.1-7.8	16-25	0-10
3284A:				
Tice	0-14	6.1-7.8	20-27	0
	14-39	5.6-7.8	16-23	0
	39-72	5.6-7.8	9.0-20	0-20
3333A:				
Wakeland	0-10	5.6-7.3	4.0-12	0
	10-50	5.6-7.8	4.0-12	0
	50-80	5.6-7.8	4.0-12	0
3334A:				
Birds	0-9	5.6-7.3	8.0-12	0
	9-37	5.6-7.8	8.0-14	0
	37-60	5.6-7.3	6.0-12	0
3451A:				
Lawson	0-14	6.1-7.8	11-28	0
	14-33	6.1-7.8	11-29	0
	33-80	6.1-7.8	11-23	0
9017A:				
Keomah	0-9	4.5-7.3	15-20	0
	9-16	4.5-7.3	15-20	0
	16-49	4.5-5.5	25-30	0
	49-80	5.1-7.3	15-20	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate
	In	pH	meq/100 g	Pct
9017B:				
Keomah----------	0-9	4.5-7.3	15-20	0
	9-16	4.5-7.3	15-20	0
	16-49	4.5-5.5	25-30	0
	49-80	5.1-7.3	15-20	0
9279B:				
Rozetta---------	0-9	5.1-7.3	10-22	0
	9-66	4.5-6.0	16-22	0
	66-76	5.6-7.8	12-17	0-15
9279C2:				
Rozetta---------	0-7	5.1-7.3	10-22	0
	7-66	4.5-6.0	16-22	0
	66-70	5.6-7.8	12-17	0-15
M-W.				
Miscellaneous water				
W.				
Water				

Table 21.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
6C2, 6D2:										
Fishhook	D	Jan-May	1.0-2.0	1.5-3.5	Perched	---	---	---	---	---
7C3, 7D3:										
Atlas	D	Jan-May	0.5-2.0	1.2-2.5	Perched	---	---	---	---	---
8D2, 8F, 8G:										
Hickory	B	All months	>6.0	>6.0	---	---	---	---	---	---
16A:										
Rushville	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	---
17A, 17B:										
Keomah	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
43A, 43B, 43B2:										
Ipava	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
45A:										
Denny	D	Jan-May	0.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	---
50A:										
Virden	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	---
51A, 51B2:										
Muscatune	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
61A:										
Atterberry	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
68A:										
Sable	B/D	Jan-May	0.0	>6.0	Apparent	0.0-0.5	Brief	Occasional	---	---
86B, 86B2, 86C2:										
Osco	B	Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
119C2, 119D2, 119E2:										
Elco	B	Feb-Apr	2.0-3.5	2.8-4.5	Perched	---	---	---	---	---
249A:										
Edinburg	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	---
257A, 257B:										
Clarksdale	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
259C2, 259D2:										
Assumption	B	Feb-Apr	2.0-3.5	2.8-4.5	Perched	---	---	---	---	---
278A, 278B:										
Stronghurst	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
279B, 279C2, 279D2:										
Rozetta	B	Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
280D2, 280F:										
Fayette---------	B	All months	>6.0	>6.0	---	---	---	---	---	---
470C2:										
Keller----------	C	Jan-May	1.0-2.0	1.5-3.3	Perched	---	---	---	---	---
549F, 549G:										
Marseilles------	B	All months	>6.0	>6.0	---	---	---	---	---	---
605C2, 605D2:										
Ursa------------	C	Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
675B:										
Greenbush-------	B	Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
699A:										
Timewell--------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
		May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
799D:										
Arents----------	D	Feb-Apr	4.0-6.0	5.0-6.0	Perched	---	---	---	---	---
802B, 802E:										
Orthents--------	B	All months	>6.0	>6.0	---	---	---	---	---	---
824B:										
Swanwick--------	D	Feb-Apr	3.5-5.0	4.5-6.0	Perched	---	---	---	---	---
855A:										
Timewell--------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
Ipava-----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	---
872B:										
Rapatee---------	D	Feb-Apr	3.5-5.0	4.5-6.0	Perched	---	---	---	---	---
1334A:										
Birds-----------	B/D	Nov-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Frequent
3074A:										
Radford---------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent
3107A:										
Sawmill---------	B/D	Jan-May	0.0-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent
3284A:										
Tice------------	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent
3333A:										
Wakeland--------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
3334A:										
Birds-----------	C	Jan-May	0.0-1.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent
3451A:										
Lawson----------	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		June	---	---	---	---	---	---	Brief	Frequent
		November	---	---	---	---	---	---	Brief	Frequent
		December	---	---	---	---	---	---	Brief	Frequent
9017A, 9017B:										
Keomah----------	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	---
9279B, 9279C2:										
Rozetta---------	B	Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	---
M-W.										
Miscellaneous water										
W.										
Water										

Table 22.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
6C2, 6D2:					
Fishhook	---	---	High	High	High
7C3, 7D3:					
Atlas	---	---	High	High	Moderate
8D2, 8F, 8G:					
Hickory	---	---	Moderate	Moderate	Moderate
16A:					
Rushville	---	---	High	High	High
17A, 17B:					
Keomah	---	---	High	High	Moderate
43A, 43B, 43B2:					
Ipava	---	---	High	High	Moderate
45A:					
Denny	---	---	High	High	Moderate
50A:					
Virden	---	---	High	High	Moderate
51A, 51B2:					
Muscatune	---	---	High	High	Moderate
61A:					
Atterberry	---	---	High	High	Moderate
68A:					
Sable	---	---	High	High	Low
86B, 86B2, 86C2:					
Osco	---	---	High	Moderate	Moderate
119C2, 119D2, 119E2:					
Elco	---	---	High	High	Moderate
249A:					
Edinburg	---	---	High	High	Moderate
257A, 257B:					
Clarksdale	---	---	High	High	Moderate
259C2, 259D2:					
Assumption	---	---	High	High	Moderate
278A, 278B:					
Stronghurst	---	---	High	High	Moderate
279B, 279C2, 279D2:					
Rozetta	---	---	High	Moderate	Moderate
280D2, 280F:					
Fayette	---	---	High	Moderate	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In			
470C2:					
Keller	---	---	High	High	Moderate
549F, 549G:					
Marseilles	Bedrock (paralithic)	20-40	High	High	Moderate
605C2, 605D2:					
Ursa	---	---	Moderate	High	Moderate
675B:					
Greenbush	---	---	High	Moderate	Moderate
699A:					
Timewell	---	---	High	High	High
799D:					
Arents	---	---	High	Moderate	High
802B, 802E:					
Orthents	---	---	Moderate	Moderate	Moderate
824B:					
Swanwick	---	---	High	Moderate	High
855A:					
Timewell	---	---	High	High	High
Ipava	---	---	High	High	Moderate
872B:					
Rapatee	---	---	High	Moderate	Low
1334A:					
Birds	---	---	High	Moderate	Low
3074A:					
Radford	---	---	High	High	Moderate
3107A:					
Sawmill	---	---	High	High	Low
3284A:					
Tice	---	---	High	High	Low
3333A:					
Wakeland	---	---	High	Moderate	Low
3334A:					
Birds	---	---	High	Moderate	Low
3451A:					
Lawson	---	---	High	Moderate	Low
9017A, 9017B:					
Keomah	---	---	High	High	Moderate
9279B, 9279C2:					
Rozetta	---	---	High	Moderate	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
M-W. Miscellaneous water					
W. Water					

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

N

INDEX TO MAP SHEETS

MC DONOUGH COUNTY, ILLINOIS

1 0 1 2 3

MILES

1 0 1 2 3 4 5 6

KILOMETERS

SCALE = 1:90000

SOIL LEGEND

Headnote

SYMBOL	NAME
6C2	Fishhook silt loam, 5 to 10 percent slopes, eroded
6D2	Fishhook silt loam, 10 to 18 percent slopes, eroded
7C3	Atlas silty clay loam, 5 to 10 percent slopes, severely eroded
7D3	Atlas silty clay loam, 10 to 18 percent slopes, severely eroded
8D2	Hickory silt loam, 10 to 18 percent slopes, eroded
8F	Hickory silt loam, 18 to 35 percent slopes
8G	Hickory silt loam, 35 to 60 percent slopes
16A	Rushville silt loam, 0 to 2 percent slopes
17A	Keomah silt loam, 0 to 2 percent slopes
17B	Keomah silt loam, 2 to 5 percent slopes
43A	Ipava silt loam, 0 to 2 percent slopes
43B	Ipava silt loam, 2 to 5 percent slopes
43B2	Ipava silt loam, 2 to 5 percent slopes, eroded
45A	Denny silt loam, 0 to 2 percent slopes
50A	Virden silty clay loam, 0 to 2 percent slopes
51A	Muscatune silt loam, 0 to 2 percent slopes
51B2	Muscatune silt loam, 2 to 5 percent slopes, eroded
61A	Atterberry silt loam, 0 to 2 percent slopes
68A	Sable silty clay loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
86B2	Osco silt loam, 2 to 5 percent slopes, eroded
86C2	Osco silt loam, 5 to 10 percent slopes, eroded
119C2	Elco silt loam, 5 to 10 percent slopes, eroded
119D2	Elco silt loam, 10 to 18 percent slopes, eroded
119E2	Elco silt loam, 18 to 25 percent slopes, eroded
249A	Edinburg silty clay loam, 0 to 2 percent slopes
257A	Clarksdale silt loam, 0 to 2 percent slopes
257B	Clarksdale silt loam, 2 to 5 percent slopes
259C2	Assumption silt loam, 5 to 10 percent slopes, eroded
259D2	Assumption silt loam, 10 to 18 percent slopes, eroded
278A	Stronghurst silt loam, 0 to 2 percent slopes
278B	Stronghurst silt loam, 2 to 5 percent slopes
279B	Rozetta silt loam, 2 to 5 percent slopes
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded
279D2	Rozetta silt loam, 10 to 18 percent slopes, eroded
280D2	Fayette silt loam, 10 to 18 percent slopes, eroded
280F	Fayette silt loam, 18 to 35 percent slopes
470C2	Keller silt loam, 5 to 10 percent slopes, eroded
549F	Marseilles silt loam, 18 to 35 percent slopes
549G	Marseilles silt loam, 35 to 60 percent slopes
605C2	Ursa silt loam, 5 to 10 percent slopes, eroded
605D2	Ursa loam, 10 to 18 percent slopes, eroded
675B	Greenbush silt loam, 2 to 5 percent slopes
699A	Timewell silt loam, 0 to 2 percent slopes
799D	Arents, loamy, hilly
802B	Orthents, loamy, undulating
802E	Orthents, loamy, hilly
824B	Swanwick silt loam, 2 to 5 percent slopes
855A	Timewell and Ipava silt loams, 0 to 2 percent slopes
872B	Rapatee silty clay loam, 2 to 5 percent slopes
1334A	Birds silt loam, undrained, 0 to 2 percent slopes, frequently flooded
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded
3334A	Birds silt loam, 0 to 2 percent slopes, frequently flooded
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded
9017A	Keomah silt loam, terrace, 0 to 2 percent slopes
9017B	Keomah silt loam, terrace, 2 to 5 percent slopes
9279B	Rozetta silt loam, terrace, 2 to 5 percent slopes
9279C2	Rozetta silt loam, terrace, 5 to 10 percent slopes, eroded
M-W	Miscellaneous water
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES
- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline & neatline
- Previously Published Survey

OTHER BOUNDARY (label)
- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER (section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION
- Divided roads
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS
- Interstate — 79 345
- Federal — 410 224
- State — 52 347
- County, farm or ranch — 1283

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES
- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS
- Medium or Small

LANDFORM FEATURES
- Prominent hill or peak
- Soil Sample Site

MISCELLANEOUS CULTURAL FEATURES
- Farmstead, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and/or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS
- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end

DRAINAGE AND IRRIGATION
- Double-line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch
- Intermittent drainage and/ or irrigation ditch

SMALL LAKES, PONDS AND RESERVOIRS
- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

MISCELLANEOUS WATER FEATURES
- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS — 61A 257B

LANDFORM FEATURES

ESCARPMENTS
- Bedrock
- Other than bedrock

SHORT STEEP SLOPE

GULLY

DEPRESSION, closed

SINKHOLE

EXCAVATIONS

PITS
- Borrow pits
- Gravel pit
- Mine or quarry

LANDFILL

MISCELLANEOUS SURFACE FEATURES
- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

Definitions of Special Symbols

Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-l more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-l or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

Name	Description	Label
Very stony spot	A spot where 0.1 to 3.0 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surface cover of the surrounding soil is less than 0.01 percent stones. Typically 0.2 acre to 2.0 acres.	STV
Wet depression	A shallow, concave area within an area of poorly drained or very poorly drained soils in which water is ponded for intermittent periods. The concave area is saturated for appreciably longer periods of time than the surrounding soil. Typically 0.2 acre to 2.0 acres.	WDP
Wet spot	A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit. Typically 0.2 acres to 2.0 acres.	WET

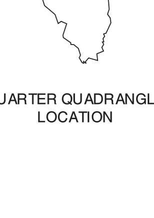
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
STRONGHURST SE QUADRANGLE
SHEET NUMBER 1 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES (0.5 – 0 – 0.5)

FEET (500 – 0 – 500 – 1000 – 1500 – 2000 – 2500 – 3000 – 3500)

KILOMETERS (0.5 – 0 – 0.5)

INDEX TO ADJOINING 3.75 MAPS

2 RARITAN SW
9 LA HARPE NE
10 BLANDINSVILLE NW

STRONGHURST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
RARITAN SW QUADRANGLE
SHEET NUMBER 2 OF 56

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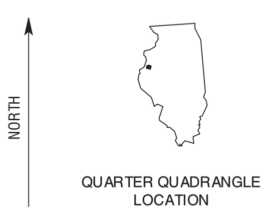
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



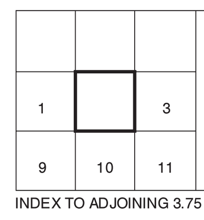
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS



1 STRONGHURST SE
3 RARITAN SE
9 LA HARPE NE
10 BLANDINSVILLE NW
11 BLANDINSVILLE NE

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RARITAN SW, ILLINOIS
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SHEET NUMBER 2 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
RARITAN SE QUADRANGLE
SHEET NUMBER 3 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

2		4	
10	11	12	

2 RARITAN SW
4 ROSEVILLE SW
10 BLANDINSVILLE NW
11 BLANDINSVILLE NE
12 GOOD HOPE NW

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RARITAN SE, ILLINOIS
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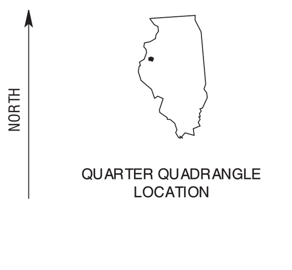
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

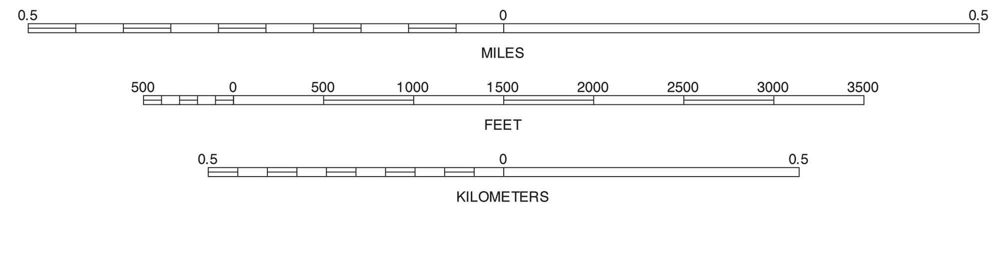
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

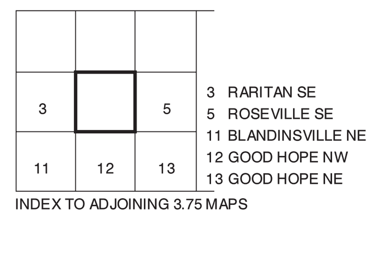
MC DONOUGH COUNTY, ILLINOIS
ROSEVILLE SW QUADRANGLE
SHEET NUMBER 4 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.







ROSEVILLE SW, ILLINOIS

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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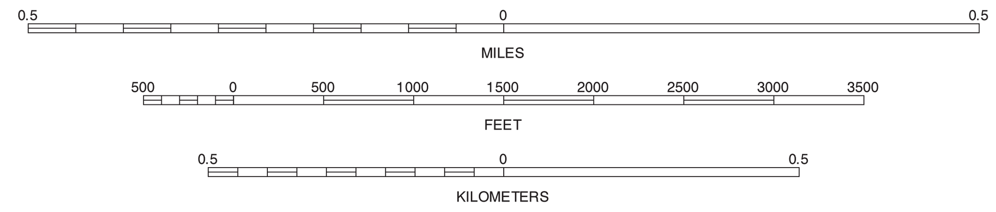
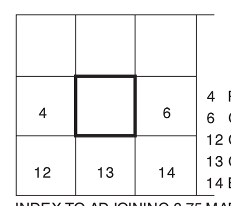
MC DONOUGH COUNTY, ILLINOIS
ROSEVILLE SE QUADRANGLE
SHEET NUMBER 5 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:12000





4 ROSEVILLE SW
6 GREENBUSH SW
12 GOOD HOPE NW
13 GOOD HOPE NE
14 BUSHNELL WEST NW

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ROSEVILLE SE, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
GREENBUSH SW QUADRANGLE
SHEET NUMBER 6 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83), GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

5 ROSEVILLE SE
7 GREENBUSH SE
13 GOOD HOPE NE
14 BUSHNELL WEST NW
15 BUSHNELL WEST NE

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GREENBUSH SW, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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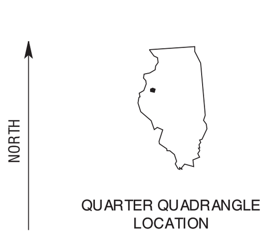
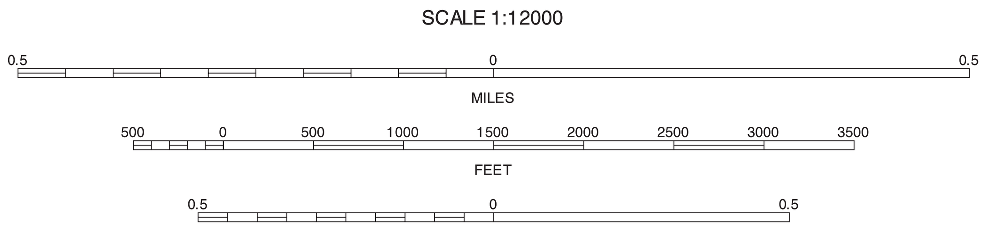
MC DONOUGH COUNTY, ILLINOIS
GREENBUSH SE QUADRANGLE
SHEET NUMBER 7 OF 56

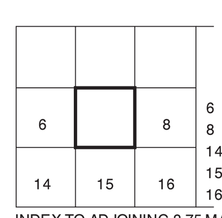
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION





6 GREENBUSH SW
8 AVON SW
14 BUSHNELL WEST NW
15 BUSHNELL WEST NE
16 BUSHNELL EAST NW

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GREENBUSH SE, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
AVON SW QUADRANGLE
SHEET NUMBER 8 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

7 GREENBUSH SE
15 BUSHNELL WEST NE
16 BUSHNELL EAST NW

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AVON SW, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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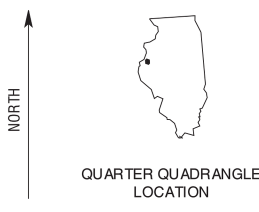
MC DONOUGH COUNTY, ILLINOIS
LA HARPE NE QUADRANGLE
SHEET NUMBER 9 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

	1	2
	■	10
	17	18

1 STRONGHURST SE
2 RARITAN SW
10 BLANDINSVILLE NW
17 LA HARPE SE
18 BLANDINSVILLE SW

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LA HARPE NE, ILLINOIS
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SHEET NUMBER 9 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
BLANDINSVILLE NW QUADRANGLE
SHEET NUMBER 10 OF 56

90° 52′30″ — R. 4 W. — 90° 48′45″

40° 37′30″

40° 33′45″

90° 52′30″ — R. 4 W. — 90° 48′45″

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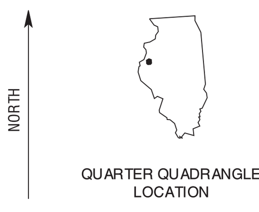

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
9		11
17	18	19

1 STRONGHURST SE
2 RARITAN SW
3 RARITAN SE
9 LA HARPE NE
11 BLANDINSVILLE NE
17 LA HARPE SE
18 BLANDINSVILLE SW
19 BLANDINSVILLE SE

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BLANDINSVILLE NW, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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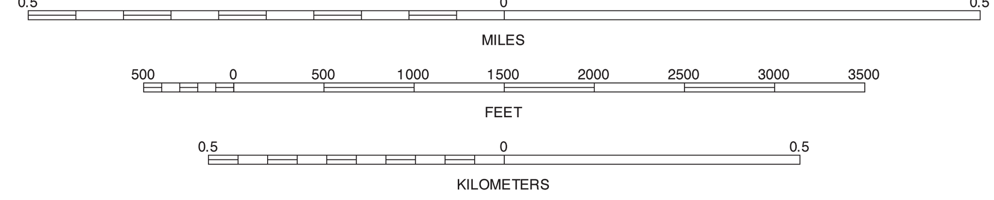
MC DONOUGH COUNTY, ILLINOIS
BLANDINSVILLE NE QUADRANGLE
SHEET NUMBER 11 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:12000



2	3	4
10		12
18	19	20

2 RARITAN SW
3 RARITAN SE
4 ROSEVILLE SW
10 BLANDINSVILLE NW
12 GOOD HOPE NW
18 BLANDINSVILLE SW
19 BLANDINSVILLE SE
20 GOOD HOPE SW

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BLANDINSVILLE NE, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
GOOD HOPE NW QUADRANGLE
SHEET NUMBER 12 OF 56

SCALE 1:12000

MILES

FEET

KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

3	4	5
11		13
19	20	21

3 RARITAN SE
4 ROSEVILLE SW
5 ROSEVILLE SE
11 BLANDINSVILLE NE
13 GOOD HOPE NE
19 BLANDINSVILLE SE
20 GOOD HOPE SW
21 GOOD HOPE SE

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GOOD HOPE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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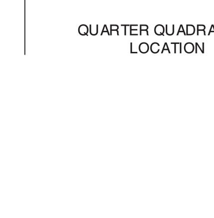

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

4	5	6
12		14
20	21	22

4 ROSEVILLE SW
5 ROSEVILLE SE
6 GREENBUSH SW
12 GOOD HOPE NW
14 BUSHNELL WEST NW
20 GOOD HOPE SW
21 GOOD HOPE SE
22 BUSHNELL WEST SW

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GOOD HOPE NE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
BUSHNELL WEST NW QUADRANGLE
SHEET NUMBER 14 OF 56

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

5	6	7
13		15
21	22	23

5 ROSEVILLE SE
6 GREENBUSH SW
7 GREENBUSH SE
13 GOOD HOPE NE
15 BUSHNELL WEST NE
21 GOOD HOPE SE
22 BUSHNELL WEST SW
23 BUSHNELL WEST SE

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BUSHNELL WEST NW, ILLINOIS
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MC DONOUGH COUNTY, ILLINOIS
BUSHNELL WEST NE QUADRANGLE
SHEET NUMBER 15 OF 56

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

6	7	8
14		16
22	23	24

6 GREENBUSH SW
7 GREENBUSH SE
8 AVON SW
14 BUSHNELL WEST NW
16 BUSHNELL EAST NW
22 BUSHNELL WEST SW
23 BUSHNELL WEST SE
24 BUSHNELL EAST SW

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BUSHNELL WEST NE, ILLINOIS
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DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
BUSHNELL EAST NW QUADRANGLE
SHEET NUMBER 16 OF 56

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

7	8	
15		
23	24	

7 GREENBUSH SE
8 AVON SW
15 BUSHNELL WEST NE
23 BUSHNELL WEST SE
24 BUSHNELL EAST SW

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BUSHNELL EAST NW, ILLINOIS

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

	9	10
	■	18
	25	26

9 LA HARPE NE
10 BLANDINSVILLE NW
18 BLANDINSVILLE SW
25 FOUNTAIN GREEN NE
26 COLCHESTER NW

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LA HARPE SE, ILLINOIS

3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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DEPARTMENT OF AGRICULTURE
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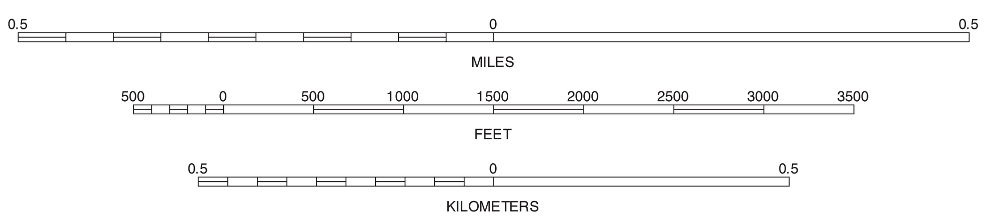
MC DONOUGH COUNTY, ILLINOIS
BLANDINSVILLE SW QUADRANGLE
SHEET NUMBER 18 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



9	10	11
17		19
25	26	27

9 LA HARPE NE
10 BLANDINSVILLE NW
11 BLANDINSVILLE NE
17 LA HARPE SE
19 BLANDINSVILLE SE
25 FOUNTAIN GREEN NE
26 COLCHESTER NW
27 COLCHESTER NE

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BLANDINSVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
BLANDINSVILLE SE QUADRANGLE
SHEET NUMBER 19 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

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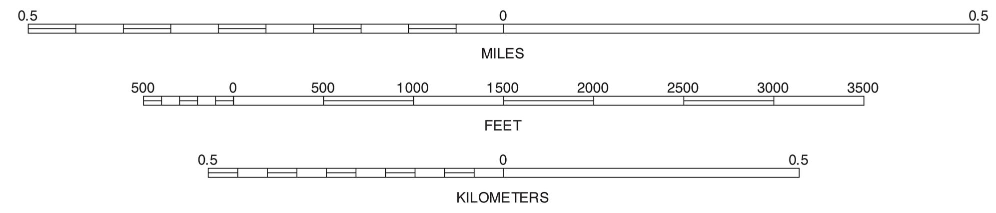

10	11	12
18		20
26	27	28

10 BLANDINSVILLE NW
11 BLANDINSVILLE NE
12 GOOD HOPE NW
18 BLANDINSVILLE SW
20 GOOD HOPE SW
26 COLCHESTER NW
27 COLCHESTER NE
28 MACOMB NW

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BLANDINSVILLE SE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
GOOD HOPE SW QUADRANGLE
SHEET NUMBER 20 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

11	12	13
19		21
27	28	29

11 BLANDINSVILLE NE
12 GOOD HOPE NW
13 GOOD HOPE NE
19 BLANDINSVILLE SE
21 GOOD HOPE SE
27 COLCHESTER NE
28 MACOMB NW
29 MACOMB NE

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GOOD HOPE SW, ILLINOIS

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
GOOD HOPE SE QUADRANGLE
SHEET NUMBER 21 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

12	13	14
20		22
28	29	30

12 GOOD HOPE NW
13 GOOD HOPE NE
14 BUSHNELL WEST NW
20 GOOD HOPE SW
22 BUSHNELL WEST SW
28 MACOMB NW
29 MACOMB NE
30 BARDOLPH NW

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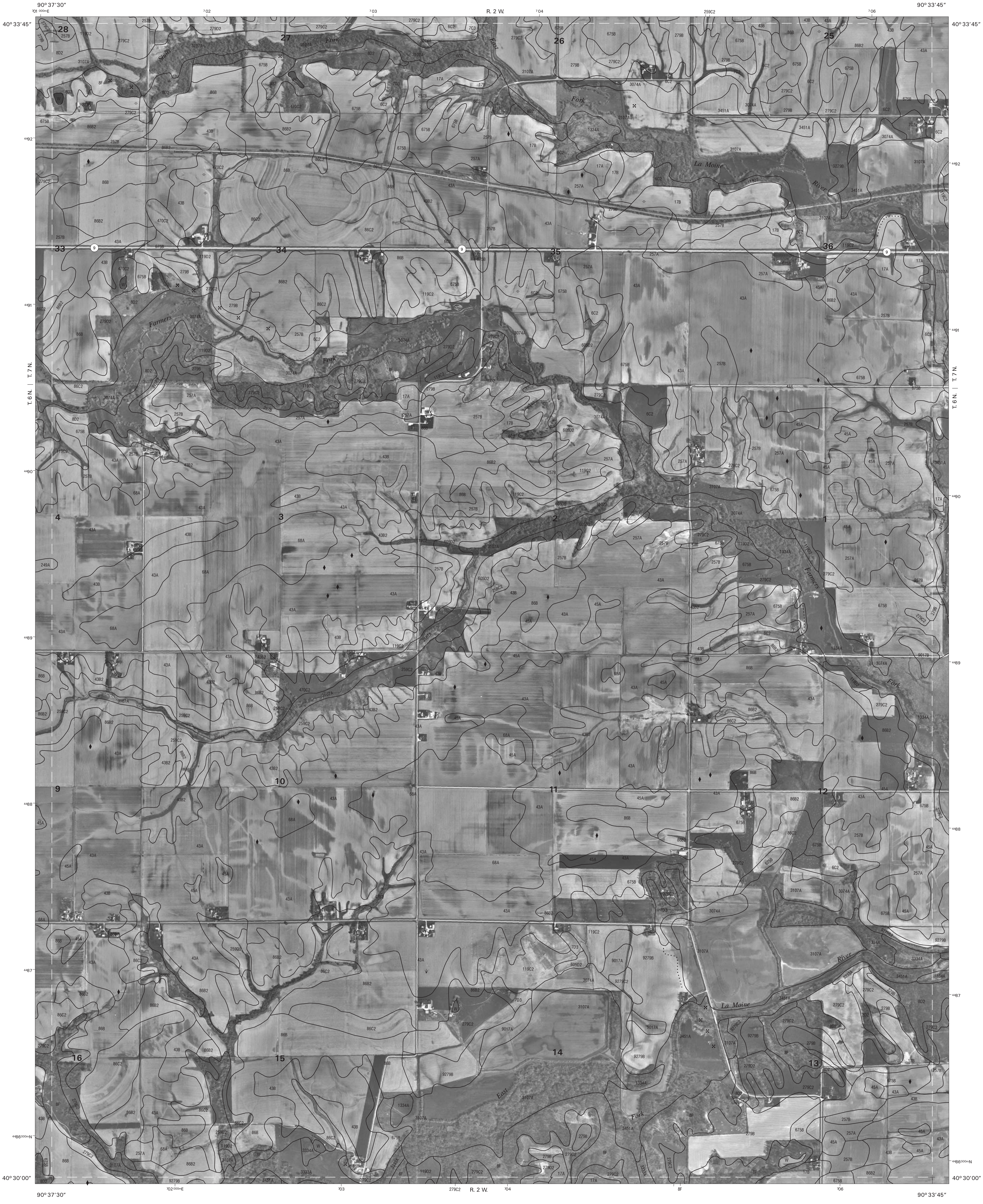
GOOD HOPE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

13	14	15
21		23
29	30	31

13 GOOD HOPE NE
14 BUSHNELL WEST NW
15 BUSHNELL WEST NE
21 GOOD HOPE SE
23 BUSHNELL WEST SE
29 MACOMB NE
30 BARDOLPH NW
31 BARDOLPH NE

INDEX TO ADJOINING 3.75 MAPS

BUSHNELL WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
BUSHNELL WEST SE QUADRANGLE
SHEET NUMBER 23 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

14	15	16
22		24
30	31	32

14 BUSHNELL WEST NW
15 BUSHNELL WEST NE
16 BUSHNELL EAST NW
22 BUSHNELL WEST SW
24 BUSHNELL EAST SW
30 BARDOLPH NW
31 BARDOLPH NE
32 ADAIR NW

INDEX TO ADJOINING 3.75 MAPS

BUSHNELL WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

90° 30′00″ | 90° 26′15″

40° 33′45″

40° 30′00″

90° 30′00″ | 712 000mE | 713 | 714 | R. 1 W. | 715 | 279C2 | 716 | 717 | 90° 26′15″

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 | 0 | 0.5
MILES

500 | 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500
FEET

0.5 | 0 | 0.5
KILOMETERS

15	16	
23		
31	32	

15 BUSHNELL WEST NE
16 BUSHNELL EAST NW
23 BUSHNELL WEST SE
31 BARDOLPH NE
32 ADAIR NW

INDEX TO ADJOINING 3.75 MAPS

BUSHNELL EAST SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 24 OF 56

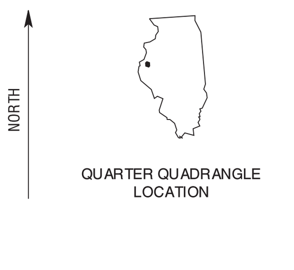
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
FOUNTAIN GREEN NE QUADRANGLE
SHEET NUMBER 25 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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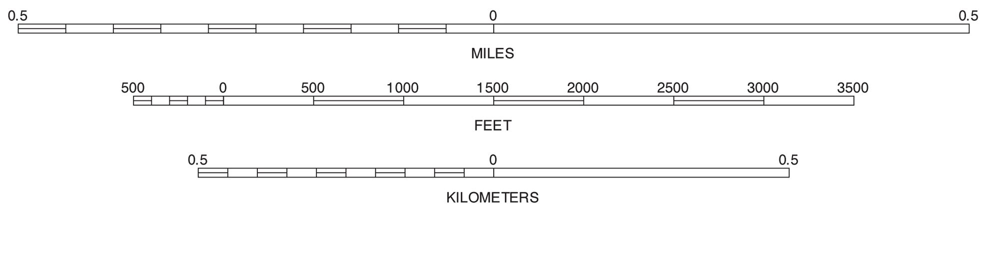
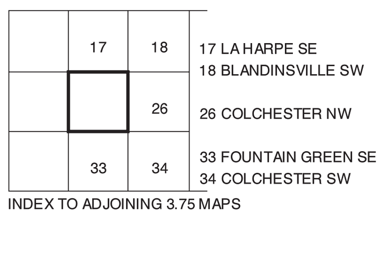




FOUNTAIN GREEN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
COLCHESTER NW QUADRANGLE
SHEET NUMBER 26 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

17	18	19
25		27
33	34	35

17 LA HARPE SE
18 BLANDINSVILLE SW
19 BLANDINSVILLE SE
25 FOUNTAIN GREEN NE
27 COLCHESTER NE
33 FOUNTAIN GREEN SE
34 COLCHESTER SW
35 COLCHESTER SE

INDEX TO ADJOINING 3.75 MAPS

COLCHESTER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
COLCHESTER NE QUADRANGLE
SHEET NUMBER 27 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

18	19	20
26		28
34	35	36

18 BLANDINSVILLE SW
19 BLANDINSVILLE SE
20 GOOD HOPE SW
26 COLCHESTER NW
28 MACOMB NW
34 COLCHESTER SW
35 COLCHESTER SE
36 MACOMB SW

INDEX TO ADJOINING 3.75 MAPS

COLCHESTER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 56

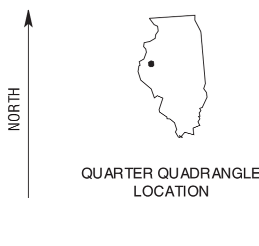
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
MACOMB NW QUADRANGLE
SHEET NUMBER 28 OF 56

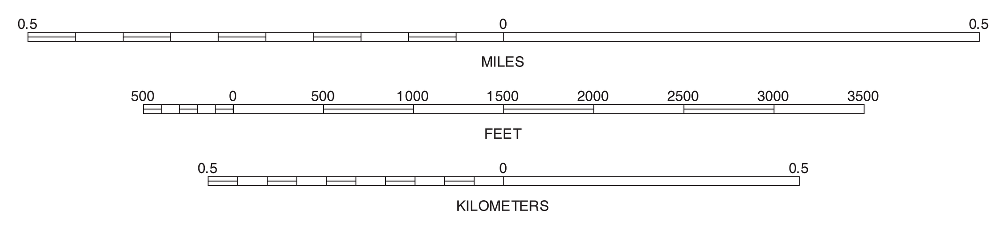
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



19	20	21
27		29
35	36	37

19 BLANDINSVILLE SE
20 GOOD HOPE SW
21 GOOD HOPE SE
27 COLCHESTER NE
29 MACOMB NE
35 COLCHESTER SE
36 MACOMB SW
37 MACOMB SE

INDEX TO ADJOINING 3.75 MAPS

MACOMB NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 28 OF 56

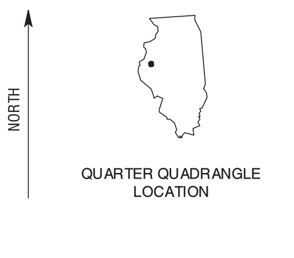
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
MACOMB NE QUADRANGLE
SHEET NUMBER 29 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

20	21	22
28		30
36	37	38

20 GOOD HOPE SW
21 GOOD HOPE SE
22 BUSHNELL WEST SW
28 MACOMB NW
30 BARDOLPH NW
36 MACOMB SW
37 MACOMB SE
38 BARDOLPH SW

INDEX TO ADJOINING 3.75 MAPS

MACOMB NE, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

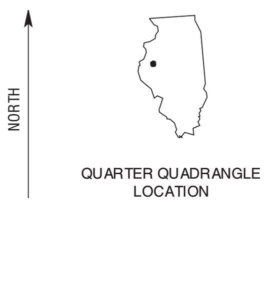
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
BARDOLPH NW QUADRANGLE
SHEET NUMBER 30 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

21	22	23
29		31
37	38	39

21 GOOD HOPE SE
22 BUSHNELL WEST SW
23 BUSHNELL WEST SE
29 MACOMB NE
31 BARDOLPH NE
37 MACOMB SE
38 BARDOLPH SW
39 BARDOLPH SE

INDEX TO ADJOINING 3.75 MAPS

BARDOLPH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 56

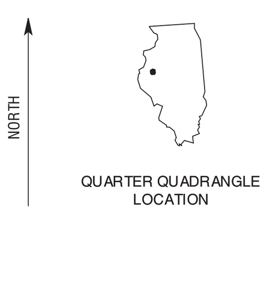
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
BARDOLPH NE QUADRANGLE
SHEET NUMBER 31 OF 56

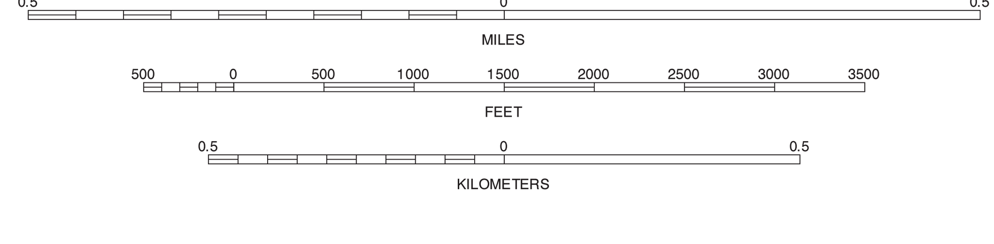
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



22	23	24
30		32
38	39	40

22 BUSHNELL WEST SW
23 BUSHNELL WEST SE
24 BUSHNELL EAST SW
30 BARDOLPH NW
32 ADAIR NW
38 BARDOLPH SW
39 BARDOLPH SE
40 ADAIR SW

INDEX TO ADJOINING 3.75 MAPS

BARDOLPH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 31 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
ADAIR NW QUADRANGLE
SHEET NUMBER 32 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

23	24	
31		
39	40	

23 BUSHNELL WEST SE
24 BUSHNELL EAST SW
31 BARDOLPH NE
39 BARDOLPH SE
40 ADAIR SW

INDEX TO ADJOINING 3.75 MAPS

ADAIR NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
FOUNTAIN GREEN SE QUADRANGLE
SHEET NUMBER 33 OF 56

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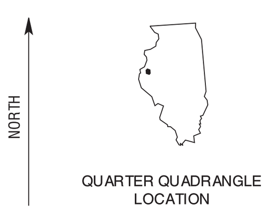
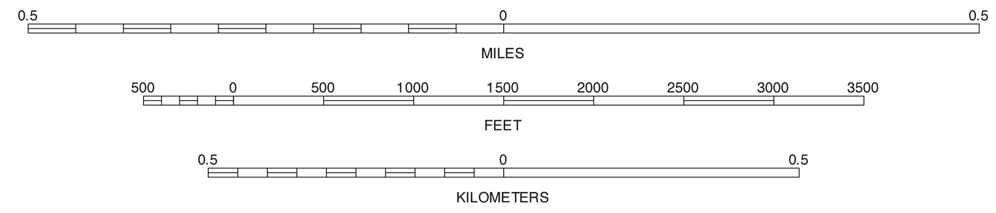
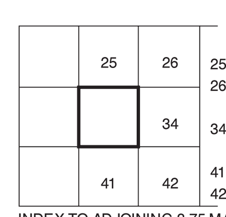
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000





25 FOUNTAIN GREEN NE
26 COLCHESTER NW
34 COLCHESTER SW
41 PLYMOUTH NE
42 FANDON NW

INDEX TO ADJOINING 3.75 MAPS

FOUNTAIN GREEN SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

90° 52′30″ R. 4 W. 90° 48′45″

40° 26′15″ 40° 26′15″

40° 22′30″ 40° 22′30″

90° 52′30″ R. 4 W. 90° 48′45″

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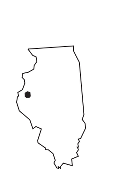
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

25	26	27
33		35
41	42	43

25 FOUNTAIN GREEN NE
26 COLCHESTER NW
27 COLCHESTER NE
33 FOUNTAIN GREEN SE
35 COLCHESTER SE
41 PLYMOUTH NE
42 FANDON NW
43 FANDON NE

INDEX TO ADJOINING 3.75 MAPS

COLCHESTER SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 34 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
COLCHESTER SE QUADRANGLE
SHEET NUMBER 35 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

26	27	28
34		36
42	43	44

26 COLCHESTER NW
27 COLCHESTER NE
28 MACOMB NW
34 COLCHESTER SW
36 MACOMB SW
42 FANDON NW
43 FANDON NE
44 DODDSVILLE NW

INDEX TO ADJOINING 3.75 MAPS

COLCHESTER SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
MACOMB SW QUADRANGLE
SHEET NUMBER 36 OF 56

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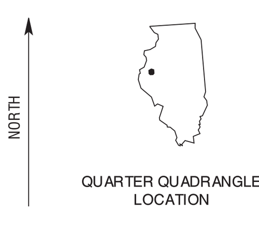
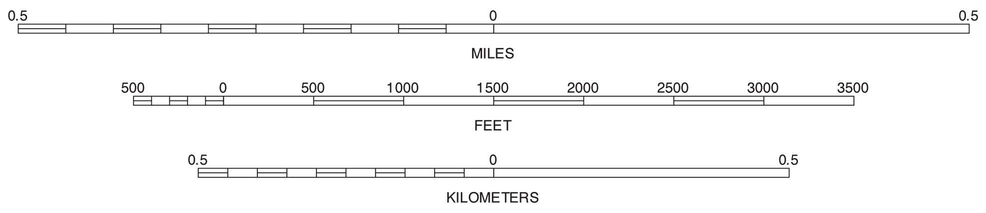


QUARTER QUADRANGLE LOCATION



27	28	29
35		37
43	44	45

27 COLCHESTER NE
28 MACOMB NW
29 MACOMB NE
35 COLCHESTER SE
37 MACOMB SE
43 FANDON NE
44 DODDSVILLE NW
45 DODDSVILLE NE

INDEX TO ADJOINING 3.75 MAPS

MACOMB SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
MACOMB SE QUADRANGLE
SHEET NUMBER 37 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

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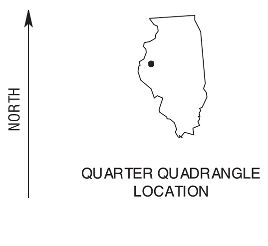
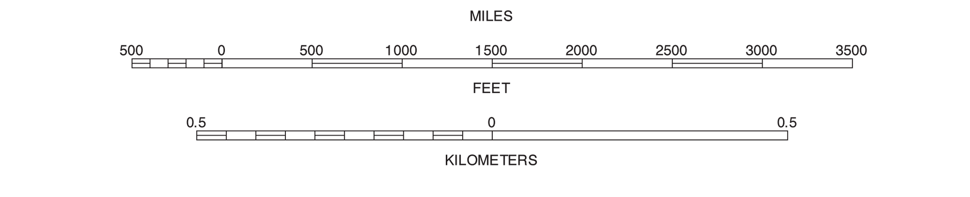


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



28	29	30
36		38
44	45	46

28 MACOMB NW
29 MACOMB NE
30 BARDOLPH NW
36 MACOMB SW
38 BARDOLPH SW
44 DODDSVILLE NW
45 DODDSVILLE NE
46 INDUSTRY NW

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MACOMB SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 37 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
BARDOLPH SW QUADRANGLE
SHEET NUMBER 38 OF 56

SCALE 1:12000

MILES

FEET

KILOMETERS

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

29	30	31
37		39
45	46	47

29 MACOMB NE
30 BARDOLPH NW
31 BARDOLPH NE
37 MACOMB SE
39 BARDOLPH SE
45 DODDSVILLE NE
46 INDUSTRY NW
47 INDUSTRY NE

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BARDOLPH SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 38 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
BARDOLPH SE QUADRANGLE
SHEET NUMBER 39 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

30	31	32
38		40
46	47	48

30 BARDOLPH NW
31 BARDOLPH NE
32 ADAIR NW
38 BARDOLPH SW
40 ADAIR SW
46 INDUSTRY NW
47 INDUSTRY NE
48 VERMONT NW

INDEX TO ADJOINING 3.75 MAPS

BARDOLPH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
ADAIR SW QUADRANGLE
SHEET NUMBER 40 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

31	32	
39		
47	48	

31 BARDOLPH NE
32 ADAIR NW
39 BARDOLPH SE
47 INDUSTRY NE
48 VERMONT NW

INDEX TO ADJOINING 3.75 MAPS

ADAIR SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 40 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
PLYMOUTH NE QUADRANGLE
SHEET NUMBER 41 OF 56

90° 56′15″ — R. 4 W. — 90° 52′30″

40° 22′30″

40°18′45″

90° 56′15″ — R. 4 W. — 90° 52′30″

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

	33	34
		42
	49	50

33 FOUNTAIN GREEN SE
34 COLCHESTER SW
42 FANDON NW
49 PLYMOUTH SE
50 FANDON SW

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PLYMOUTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 41 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
FANDON NW QUADRANGLE
SHEET NUMBER 42 OF 56

90° 52′30″ — 90° 48′45″ — 40° 22′30″ — 40°18′45″

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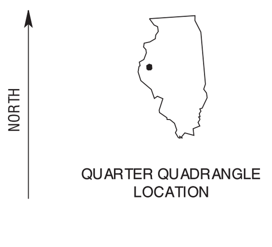
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 — 0 — 0.5 MILES

500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500 FEET

0.5 — 0 — 0.5 KILOMETERS

33	34	35
41		43
49	50	51

33 FOUNTAIN GREEN SE
34 COLCHESTER SW
35 COLCHESTER SE
41 PLYMOUTH NE
43 FANDON NE
49 PLYMOUTH SE
50 FANDON SW
51 FANDON SE

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FANDON NW, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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MC DONOUGH COUNTY, ILLINOIS
FANDON NE QUADRANGLE
SHEET NUMBER 43 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

34	35	36
42		44
50	51	52

34 COLCHESTER SW
35 COLCHESTER SE
36 MACOMB SW
42 FANDON NW
44 DODDSVILLE NW
50 FANDON SW
51 FANDON SE
52 DODDSVILLE SW

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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MC DONOUGH COUNTY, ILLINOIS
DODDSVILLE NW QUADRANGLE
SHEET NUMBER 44 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

35	36	37
43		45
51	52	53

35 COLCHESTER SE
36 MACOMB SW
37 MACOMB SE
43 FANDON NE
45 DODDSVILLE NE
51 FANDON SE
52 DODDSVILLE SW
53 DODDSVILLE SE

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DODDSVILLE NW, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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MC DONOUGH COUNTY, ILLINOIS
DODDSVILLE NE QUADRANGLE
SHEET NUMBER 45 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

36	37	38
44		46
52	53	54

36 MACOMB SW
37 MACOMB SE
38 BARDOLPH SW
44 DODDSVILLE NW
46 INDUSTRY NW
52 DODDSVILLE SW
53 DODDSVILLE SE
54 INDUSTRY SW

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DODDSVILLE NE, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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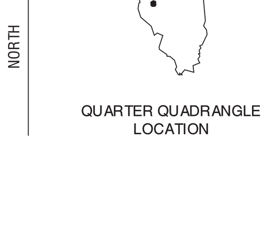
MC DONOUGH COUNTY, ILLINOIS
INDUSTRY NW QUADRANGLE
SHEET NUMBER 46 OF 56

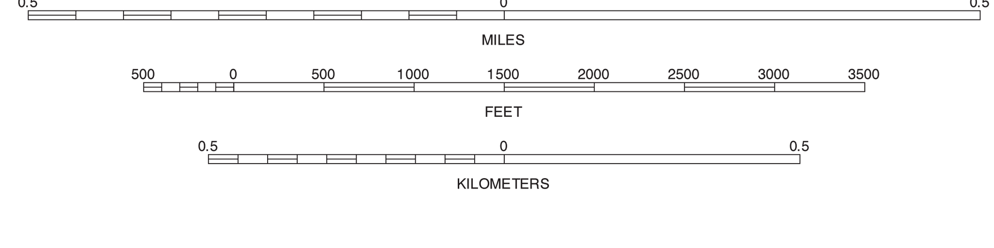
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



37	38	39
45		47
53	54	55

37 MACOMB SE
38 BARDOLPH SW
39 BARDOLPH SE
45 DODDSVILLE NE
47 INDUSTRY NE
53 DODDSVILLE SE
54 INDUSTRY SW
55 INDUSTRY SE

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INDUSTRY NW, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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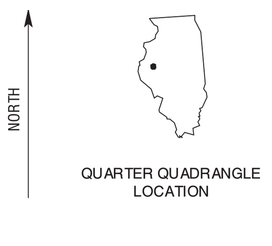
MC DONOUGH COUNTY, ILLINOIS
INDUSTRY NE QUADRANGLE
SHEET NUMBER 47 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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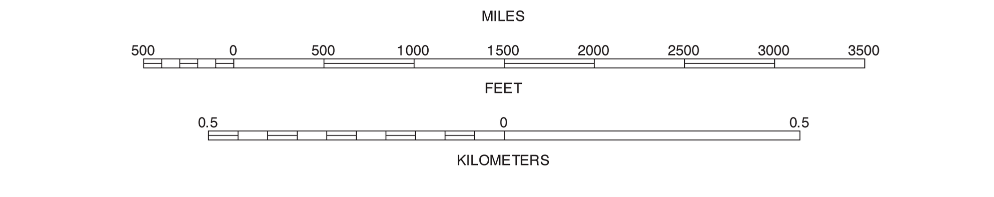

38	39	40
46		48
54	55	56

38 BARDOLPH SW
39 BARDOLPH SE
40 ADAIR SW
46 INDUSTRY NW
48 VERMONT NW
54 INDUSTRY SW
55 INDUSTRY SE
56 VERMONT SW

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INDUSTRY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 47 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MC DONOUGH COUNTY, ILLINOIS
VERMONT NW QUADRANGLE
SHEET NUMBER 48 OF 56

90° 30′00″ | 90° 26′15″

40° 22′30″

40° 18′45″

90° 30′00″ | 90° 26′15″

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North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

39	40	
47	■	
55	56	

39 BARDOLPH SE
40 ADAIR SW
47 INDUSTRY NE
55 INDUSTRY SE
56 VERMONT SW

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VERMONT NW, ILLINOIS
3.75 MINUTE SERIES
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DEPARTMENT OF AGRICULTURE
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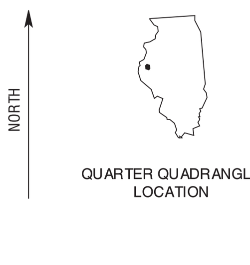
MC DONOUGH COUNTY, ILLINOIS
PLYMOUTH SE QUADRANGLE
SHEET NUMBER 49 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



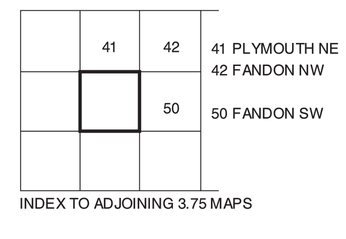
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS



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PLYMOUTH SE, ILLINOIS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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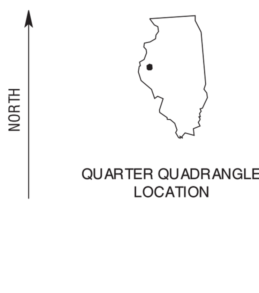
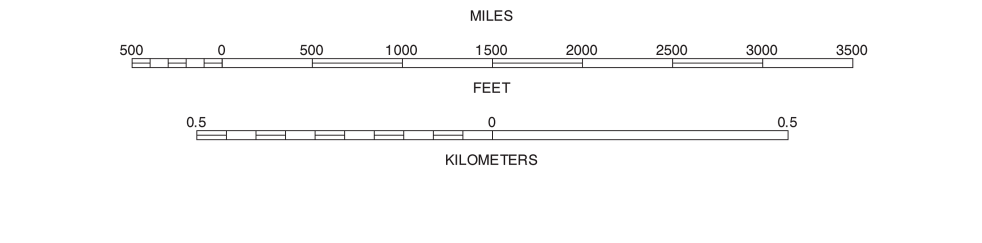
MC DONOUGH COUNTY, ILLINOIS
FANDON SW QUADRANGLE
SHEET NUMBER 50 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.





41	42	43
49		51

41 PLYMOUTH NE
42 FANDON NW
43 FANDON NE
49 PLYMOUTH SE
51 FANDON SE

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FANDON SW, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MC DONOUGH COUNTY, ILLINOIS
FANDON SE QUADRANGLE
SHEET NUMBER 51 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

42	43	44
50		52

42 FANDON NW
43 FANDON NE
44 DODDSVILLE NW
50 FANDON SW
52 DODDSVILLE SW

INDEX TO ADJOINING 3.75 MAPS

FANDON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 51 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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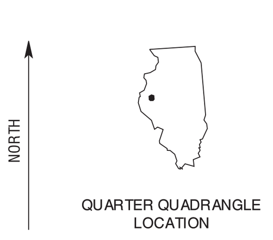
MC DONOUGH COUNTY, ILLINOIS
DODDSVILLE SW QUADRANGLE
SHEET NUMBER 52 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

43	44	45
51		53

43 FANDON NE
44 DODDSVILLE NW
45 DODDSVILLE NE
51 FANDON SE
53 DODDSVILLE SE

INDEX TO ADJOINING 3.75 MAPS

DODDSVILLE SW, ILLINOIS

3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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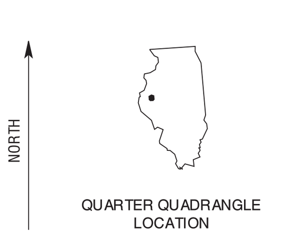
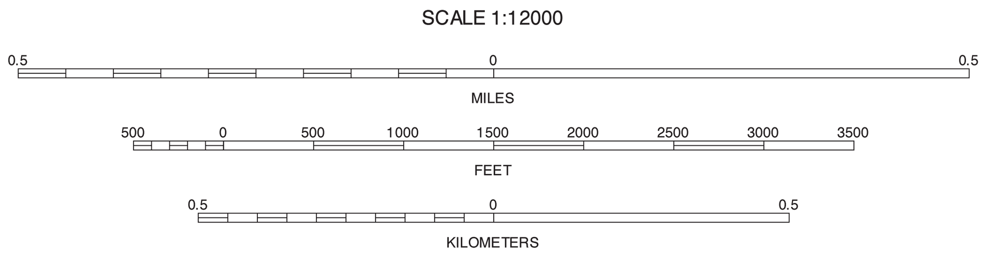
MC DONOUGH COUNTY, ILLINOIS
DODDSVILLE SE QUADRANGLE
SHEET NUMBER 53 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



44	45	46
52		54

44 DODDSVILLE NW
45 DODDSVILLE NE
46 INDUSTRY NW
52 DODDSVILLE SW
54 INDUSTRY SW

INDEX TO ADJOINING 3.75 MAPS

DODDSVILLE SE, ILLINOIS

3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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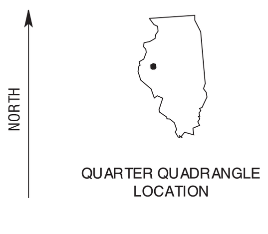
MC DONOUGH COUNTY, ILLINOIS
INDUSTRY SW QUADRANGLE
SHEET NUMBER 54 OF 56

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES
FEET
KILOMETERS

45	46	47	
53		55	

45 DODDSVILLE NE
46 INDUSTRY NW
47 INDUSTRY NE
53 DODDSVILLE SE
55 INDUSTRY SE

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INDUSTRY SW, ILLINOIS

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

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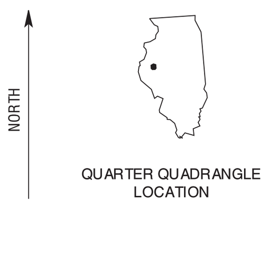

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

46 INDUSTRY NW
47 INDUSTRY NE
48 VERMONT NW
54 INDUSTRY SW
56 VERMONT SW

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INDUSTRY SE, ILLINOIS
3.75 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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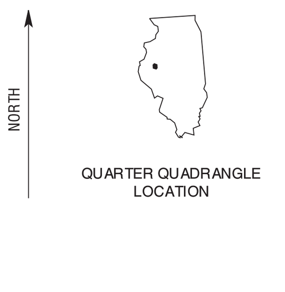
MC DONOUGH COUNTY, ILLINOIS
VERMONT SW QUADRANGLE
SHEET NUMBER 56 OF 56

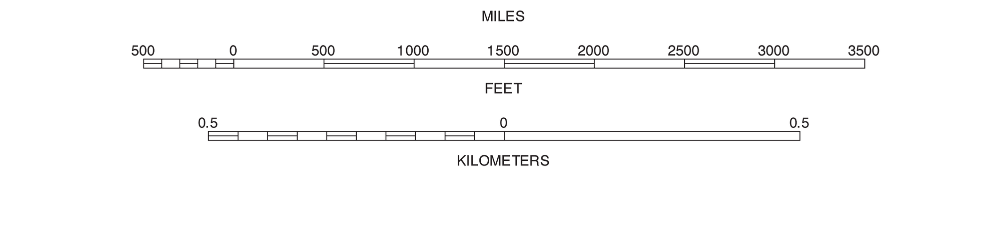
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

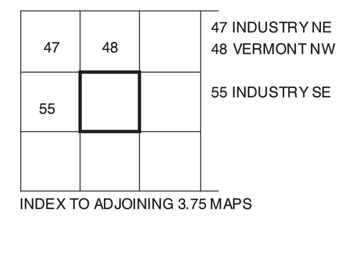
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000





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VERMONT SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 56 OF 56

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.